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The Autocar

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FOUNDED 1895 LARGEST CIRCULATION

The Autocar

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Uncongested Viewpoint

THE British holiday period now at its height, our staff have been watching conditions not only from the roads themselves but also from the air. What can be said that may be helpful to motorists? Is there any advice to be given that has not been mentioned frequently before? Very little, but one matter especially calls for repetition—the desirability of planning carefully the routes which you will take on your journeys.

When, early in 1956, *The Autocar* co-operated with *Everybody's* in preparing a series of features incorporating "Avoid-the-Traffic" maps, the interest and response were at once tremendous. The theme has now been taken up widely by others but may have lost something of its appeal, for relatively few motorists seem to be selecting avoid-the-traffic routes.

This contention is confirmed by our recent observations from above while flying as guests in an aircraft operated by the Automobile Association, and when flying the Gemini aircraft loaned by our sister journal, *Flight*. We can vouch for the fact that there are still many instances of good alternative secondary roads, little used and by no means unduly circuitous, in sight (from the air) of densely packed main roads. In other words, within five miles to one side or the other of trunk routes to the coast, there are other roads pleasantly traffic-free. Therefore the best advice we can offer again is that you spend half an hour with your maps on advance planning of your own avoid-the-traffic route.

It is sometimes maintained that in the summer, the southern coast of England—in fact almost our entire coastline—is packed with holiday makers in their thousands, and that quiet and privacy are impossible to find. This is quite untrue. A flight last week round a large section of the coast, from Bognor to Margate and on to Herne Bay, revealed many stretches of seashore which were deserted, and pleasant lanes leading down to small, quiet bays tucked away between the big resorts. The environs of Beachy Head and long reaches around Dungeness between Hastings and Hythe were cases in point. Even at the well-known holiday towns, only the central beaches seemed heavily populated.

Learn as You Go

THERE WAS a time, which many readers will easily recall, when it was taken for granted that Father or the chauffeur was alone responsible for driving and tending the car, but more often today the whole family drive—or will do so as soon as they are old enough. In addition to the old familiar motoring pastimes of scoring marks for beavers or royal or animal pubs, and others people have devised for themselves, may we now suggest, for entertainment and instruction together, short periods of running commentary from the driver, to help the young or inexperienced to cope better with car and traffic when their turn comes. It is a practice recommended by driving schools and used by the police, and consists simply of the number one driver speaking his (or her) thoughts aloud for a few miles at a time. What does he see, reason and anticipate when controlling the car? What action does he prepare for or take, and why?

Apart from the value to those who are ready to listen and to learn by example, this is also a very good exercise even for the experienced driver. It is unexpectedly easy to lay oneself open to awkward questions unless one's techniques and reasoning are very sound, and it may reveal unexpected weaknesses. From time to time drivers on *The Autocar* staff try this scheme together in order to check upon their own driving methods. Also, when driving on the road with such men as Stirling Moss and Jack Sears we get them to give commentaries.

It soon becomes easy to speak one's driving thoughts aloud, and it is not distracting. We can vouch for the value and interest of such self-analysis.

B

From a distance the sun-baked Spanish villages, with shuttered windows, look quite deserted; this one is just off the Artesa-Cervera road

IN

SOME like to arrive, stay for a couple of weeks, and return; but if you want to go home with the impression of having spent several months on holiday, the sustained interest and changes of scenery of a fortnight's touring provide one of the best answers. So this year, with the Costa Blanca as the destination, I determined to explore the Pyrenees and the backwood roads of inland Spain on the way. For economy, not to mention the convenience, a large tent was to be the mobile hotel for the trip, and a Ford Consul II was the transport. Two friends made up the party.

The first day out took us across the Channel on the Air Charter flight, and 176 miles south to set up the first camp in the woods of Versailles, near Paris; and a further 564 miles (740 from Calais) in the next two days brought us to Luchon and the Pyrenees (see map on page 180).

To extend the range of the car's 10-gallon tank between filling stations, a jerrican and an Eversure Fillacan were carried, allowing a total petrol load of 16½ gallons. This was to prove invaluable, but weight was a problem. With all the camping gear in the huge boot of the Consul, the rubber bump stops were already in light contact with the rear springs, and when—out of curiosity—the car was put on the weighbridge on the way to Southend, it turned the scales at 32½cwt, fully laden and with occupants on board. Yet the ride was still extremely comfortable, performance was quite lively, and the car cruised across France with remarkable engine silence at sustained speeds between 70 and 75 m.p.h. on the speedometer.

At Luchon we began the first real climb of the trip over the Port de Peyresourde—a new test for the Consul after the straight French roads—with countless hairpin bends and prolonged steep ascents calling for many miles in second gear. The car's good cornering was greatly appreciated, but with the excessive weight on board there was much tyre squeal, and the pressures were increased progressively to reduce it. Finally, a compromise was achieved at 36 lb sq in all round (8 lb more than the makers' recommended maximum).

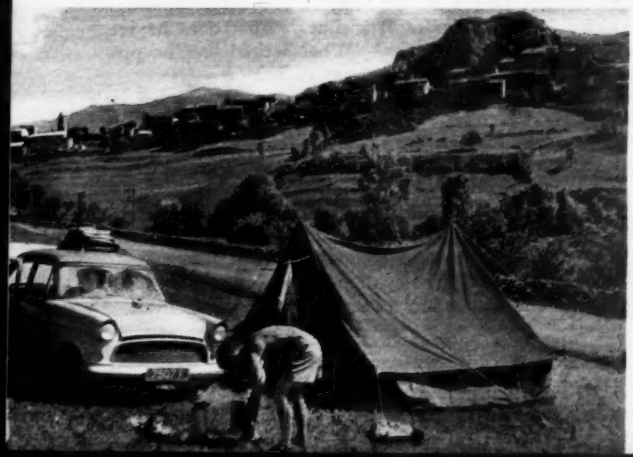
After Arreau came the Col du Tourmalet, which remains in our memories as quite the finest mountain pass of the trip. There are frequent but short tunnels, and for most of the way the road is hewn out of the rock. Like turning the pages of an album, corner after corner presented a new, exciting vista of Pyrenean grandeur, and we made frequent halts for photography. At the top of the pass one can buy postcards, and there are other attractions; then begins the descent to Luz.

There is a surprising amount of traffic on these French cols, and the standard of driving is inferior to that in the Swiss Alps: endless use of the horn and constant vigilance are required if any attempt is being made to cover the ground rapidly.

The dead-end road leading from Luz up into the mountains to Gavarnie is deservedly well known, and the diversion is entirely worth it. The road itself is well-surfaced and does not climb steeply as it passes along the valley; in the distance can be seen the snow-covered Monte Perdido. Turning up a side road, we pitched the tent by the riverside, and at night the moonlight shining on the surrounding mountains made this the perfect setting for a Pyrenean camping site.

Next day we tackled the equally magnificent Col d'Aubisque, and then headed through Eaux-Bonnes and Eaux-Chaudes to the frontier. The French frontier post is just on the outskirts

Left: Traffic on the minor roads of inland Spain is so rare that it is no embarrassment to camp by the roadside as here (near Biescas). Right: Spanish lorries are usually older than the ones seen here, and heavily overloaded; much hooting is necessary before they will pull over to allow a car to pass



of Eaux-Chaudes; there the windscreen Vignette was spotted and the car waved cheerfully through and on to the wild climb over the Pic du Midi d'Ossau. We expected to find the Spanish border post round every corner, but it is right at the top of the pass. There we made the cheerful discovery that the Spanish National Tourist office in London had misled us: the triptyque for Spain was not obtainable at the frontier, and we had to return some 40 miles to Pau to get one from the French automobile club.

Again the Consul whined its way up the Pic du Midi, but now the weather looked threatening. By the time we had climbed halfway it was raining hard; then, higher up, the storm broke. At once the road became a seething torrent and hail was mixed with the downpour, while the rolls of thunder echoed across the mountains. This, I felt, was the ideal weather for what must be one of the wildest climbs in the Pyrenees.

Michelin's excellent map of Espana Norte (No. 938) gives an interesting picture of the contrast between the roads of Southern France and Northern Spain. Bold red lines trace the path of

Costa Brava coastline at Bagur

SPAIN

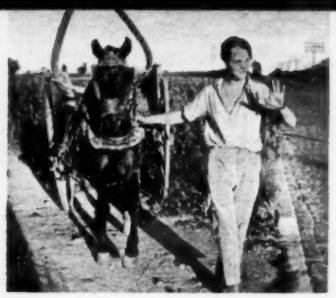
THROUGH THE PYRENEES AND INLAND SPAIN TO THE COSTA BLANCA: 3,000 MILES OF CAMPING

By J. S. M. Bladon

the roads north of the border; spindly, faint yellow ones linking with them at the frontier continue to the south, and this is precisely how it works out in practice—the surface changes round the first Spanish hairpin and becomes a mixture of broken, rough and potholed tarmac, dust and stones. After a mile or two came another surprise: the storm, which had now subsided, had washed loose shingle down the mountainside, and at one point it was piled to a height of three feet across the road. Fortunately, it was fairly solid, the lead-on was smooth, and the Consul took this hazard in its stride.

At Biescas we made another diversion to Ordesa to see the National Park. This is on the southern side of Monte Perdido,

Taken near Tarrega, this picture typifies the fine scenery and loneliness of the Spanish Pyrenees; near here we saw a golden eagle



Consul IN SPAIN...

directly south of Gavarnie, and the views are equally magnificent. Also, many rare and beautiful wild flowers grow there, and for the botanically minded member of the party it was a field day.

It did not take many miles of motoring in inland Spain to show us why the roads are so ill-kept; it is because the volume of traffic is tiny. Often we drove for as much as three-quarters of an hour without seeing a single vehicle. Thus it was easy to be lulled into a false sense of security by the deserted roads, and when the occasional smoking, roaring, heavily overladen lorry did appear, it invariably turned up cornering fast and in the middle of the road. British car horns are generally too feeble for mountain roads, and there really is need for the penetrating carrying power of a Continental wind horn.

From Arro across to Vilaller the road is not marked on many maps, and on the Michelin map it is covered with red crosses, indicating *route en très mauvais état*. The rough, unmade dirt track leading up to an English farm typifies the surfaces encountered. At home one would take such a road slowly in bottom gear, picking the way round the potholes; in Spain, with huge distances to cover, there is only one way: straight down the centre at 55 m.p.h.

On the next day the potholes were still full of muddy water in spite of the glorious sunshine which is so much an accepted part of Spain, and we had the wipers working continuously to clear the screen of the mud which was thrown up over the front of the car. After a few hours of this it was difficult to tell, looking at the car, just where the division between screen and roof occurred. There was something rather spectacular about our progress, pursued as we were by a cloud of dust, mud and flying stones.

Our route led through Pobla de Segur, Artesa and Tarrega, and still the splendidly wild and rugged scenery continued. In the little villages the travel-stained car attracted much attention, but once, motoring in the dusk of the late evening, we had an odd experience. Uncertain of the way, we stopped to ask some children playing by the roadside, but to our amazement they took one look and then turned and fled in obvious terror. In a moment the two passengers burst into laughter, realizing that it was the green instrument lighting on the driver's face that had so startled the youngsters.

Quite suddenly, near Artesa, the surroundings changed and we were out of the brown, sun-scorched mountains and running through green plains stretching out towards the sea, and the road surfaces improved slightly. Tarragona, on the coast, was reached on the seventh day, and we headed south at once towards Valencia and the Costa Blanca. Previously traffic of any sort was so rare that we camped by the roadside in any place that seemed suitable, but now on N340 the main coast road was full of lorries and the inevitable stream of horses and carts, with dogs trailing on leads, and so a new technique was evolved. It was to turn off down any likely-looking lane, proceeding carefully in case it should deteriorate into soft sand, and make camp just a few hundred yards back from the sea.

Because of the high tariff duties, Spain is rife with smuggling, and the whole coast seemed to be patrolled by the militia—a strange combination of policeman and soldier—armed with rifles. On every occasion as we made camp two of these policemen turned up wherever we were, within a minute or two; but seeing that we were only the English making camp, they soon went on with their patrolling. Only once, near the Costa Brava, were we told that we could not camp there.

After inland motoring the coast road is splendid—fairly

Numbers at camping sites in the map (left) refer to the night of the holiday on which the site was used. Below: the local children gathered round to watch us replenish water supplies in Artesa

AFTERTHOUGHTS...

... on the Car

ON SUCH a trip as this, covering 3,005 miles over all sorts of terrain, an intimate and detailed analysis of the car becomes possible. This was the de luxe version of the Ford Consul II, on which leather seats with foam rubber overlays are fitted, and they proved extremely comfortable even when, once or twice, long distances were covered without getting out of the car.

The excellent value which the Consul represents has already been noted in *The Autocar's* Road Tests, but among the respects in which the car was particularly outstanding were its handling characteristics, its generous roominess for both occupants and luggage, and the magnificent way in which the suspension dealt with bad roads at high speed. On the return to England, no weakness was evident in the suspension dampers and no rattles had developed, nor were there any signs of cracking in the walls of the Goodyear tyres. Petrol consumption cannot easily be measured in Spain because it is common to receive short measure when buying from ancient hand pumps, but in the high-speed runs across France consumptions of 24.4 and 23.9 m.p.g. were recorded; bearing in mind the load carried and the many miles covered in the mountains of southern France this is creditable. The choke was never used—even after one or two cold nights in the Pyrenees.

The much-criticized suction-operated windscreen wipers stand out as one of the few weaknesses on the Consul, but there is a vacuum pump incorporated in the mechanical fuel pump to assist their operation when the engine is working hard and vacuum depression is low. Some like these wipers, but I personally favour the two-speed, electrically operated variety. Also, I would like the horn ring to be shaped so that it does not obscure the speedometer in the straight position, and although there was never any trouble with overheating, I would prefer a thermometer to an ammeter.

My most vivid memory of the Consul on this trip was the way in which long journeys could be covered quickly and without fuss or effort. Typical of this was the return trip across France when 573 miles were covered in one day. The route on this occasion was not all straight and empty roads, because for 200 miles the car was climbing over the Massif Central, and the crossing of Paris was included in the run; yet I felt by no means done for when we finally pitched camp.

Only two pints of oil were consumed on the whole trip, and apart from topping the battery twice the car received no service at all—even to the extent of topping up the radiator. In spite of 3,000 miles without greasing, the steering was as light, on return to England, as at the start.

... on Spain for the Tourist

FEW Continental countries make as little effort to foster tourism as Spain, and it is interesting to wonder what makes it so attractive. For example, it is still necessary for each member of the party to obtain a passport visa, costing £1 7s, and there are other "official rackets." Perhaps the excellent beaches, the friendliness of the inhabitants, the low cost of living and the almost guaranteed fine weather are the chief draws.

Before crossing the border we filled to capacity with French petrol, but in the 400-odd miles between Pau and Tarragona some Spanish petrol had to be purchased. So-called 72-octane, it is quite the most terrible brew, and even mixed with a good quantity of French Super, it took the smooth sparkle out of the Consul's engine, leaving it more like a diesel unit. Fortunately at Amposta, midway between Castellon and Tarragona, we found an ultra-modern, well-equipped petrol station. Never before have I been bowed into a filling station, and then stood by the car having my blazer dusted by an attendant while others cleaned the head lamps and windows, and filled the tank and tins with much-needed 90-octane spirit. Bad as many of the roads are, numerous important road building projects are in progress. The tourist need have no worries about major roads marked on Michelin maps in bold red, as they are mainly satisfactory and even good in some areas. On the coast road there are many by-passes, and north of Sueca, for example, we found one stretch of well-surfaced road which was both flat and dead straight for 5.7 miles.

... on the Channel Crossing

THE CHANNEL Air Bridge of Air Charter, Ltd., operating from Southend, has a particular appeal to motorists living in London or the east. The aerial view of the south-east of England over which the flight passes is specially interesting.

The airport service at both Southend and Calais is efficient, and the time saved in going by air compared with the sea crossing almost adds up to an extra day on the Continent. There were no Customs charges.

... on Finance

EACH MEMBER of the party drew £25 in foreign currency, of which approximately £12 each was unspent at the end of the trip. In Spain expenditure was limited to petrol, fruit and the occasional bottle of milk. Additional expenditure in English money included £15 on French petrol coupons, £8 on tinned food and supplies, and about £4 on English petrol. Air Charter return fares for the Ford Consul and party of three worked out at £46, bringing the total cost of the holiday to around £35 each.

well surfaced in tarmac and fit for cruising, with care, at 70 m.p.h. as in France. The chief points to remember are that lorry drivers need to hear long and repeated hooting from behind before they will pull over to the side of the road, and that it is vital to keep an eye on the sides of the road for the occasional cart or cyclist that will sometimes shoot out suddenly from a side road without a moment's glance to see whether the main road is clear. Carts on the main road usually keep well in to the side. *Obras* means works, and this is the only other hazard of driving in Spain. When you see it, brake hard and proceed at caution, for someone has taken the road away.

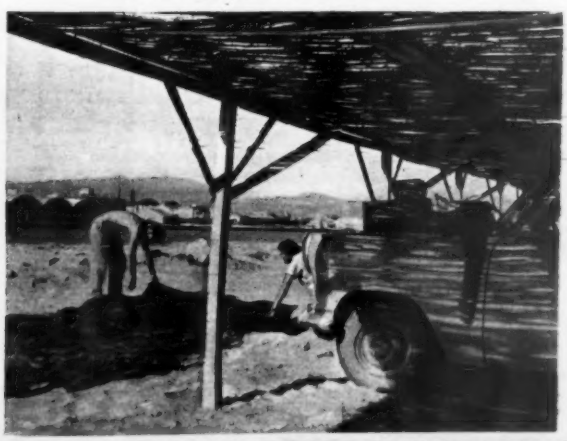
In Valencia on a Sunday we saw that overrated and gaudy performance called a bull-fight, and then followed the minor road along the coast to the south of Saler. As always, the surface deteriorated off the main road, and a flying rock struck the vulnerable drain plug which hangs down from the petrol tank—and may well be considered the Achilles heel of the Consul. Petrol started to drip rapidly from the tank, so we made all speed to the nearest *agencia* Ford, which (according to the maker's list of official agents) was 20 miles away at Gandia.

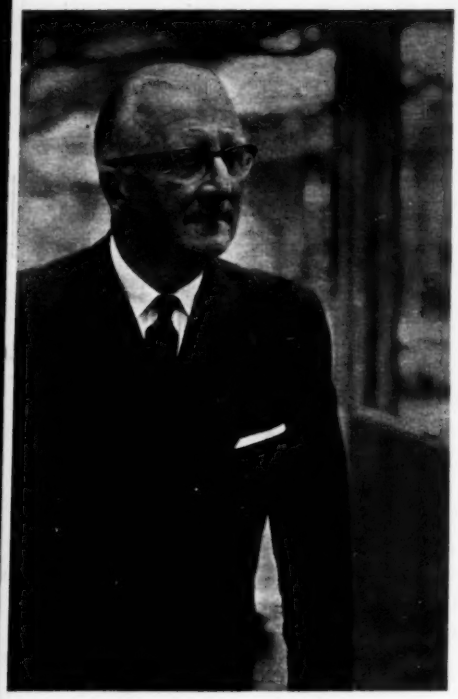
It was a stroke of master-planning, because of all the good beaches along the coast from Barcelona one of the best is at Gandia, and while we bathed and lazed in the sun the tank was removed, soldered without any explosions, and refitted, all for an equivalent cost of 12s 6d. Vehicles are so old and decrepit in Spain that the standards of repair skill are very high; in the *agencia* Ford we saw a lorry chassis, finally discarded, on which 11 different cracks and fractures had been neatly welded.

After four nights in the Valencia area we reluctantly set off north for the return trip through Barcelona, and made a prolonged visit to Tossa—surely one of the best and prettiest of the Costa Brava resorts, although it is very commercialized for the thousands of tourist visitors which it attracts.

A final night in Spain and most of the next day were spent at Bagur, leaving 2 days for the 850-mile return trip to catch the Air Charter's 4 p.m. flight.

Left: Folding the tent at Gandia—southernmost point reached; right: Consul overtaking the local traffic—horse and cart





Right From Every Angle

THE JAGUAR'S BACKGROUND

The man is inseparable from the company —Sir William Lyons

IF you live with a Jaguar it is as well to bear in mind the ferocity of the beast. In the four-wheel member of the species, this ferocity is evident in speed and acceleration, and the actual fierceness is masked by a deceptive docility. I know, because I have lived with an XK140 for 43,000 miles, and often the only realization of the car's tremendous speed has been when another road user, hopelessly misjudging it, has placed me in jeopardy.

This is a car that does 60 m.p.h. when you think it is doing 40, and a hundred when there is little to suggest that you have exceeded 80. It is a private express train of a car, covering the ground in giant strides, every line of it alive with power and spectacularly handsome. And it costs about half as much as its rivals in performance. How is it done?

Probably the only way of finding out is to track the Jaguar down to its lair—an ultra-modern factory fronting on Browns Lane, to the north of Coventry. Jungle jaguars, you recall, do not advertise their hideouts, and until you sight the actual entrance of the car factory it is only the quick surge-past of a new model on test that confirms the taking of the right turning, although main-road signs exist on A45. And as soon as the commissionaire invites you to take a seat, the awareness comes of a special Jaguar atmosphere.

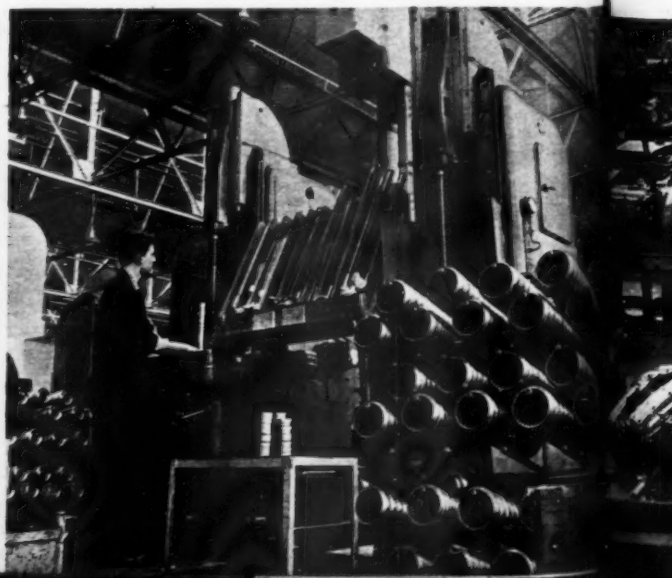
You are in the great hall of the administration block. White walls rise from a highly polished floor to a curved ceiling with roof windows. On the walls are oil paintings of Jaguars in action, and high on the end wall is a beautiful copy of the Annigoni portrait of Her Majesty the Queen. It is this end of the hall that is fully furnished, the other containing only a Show cutaway of the famous XK engine, two performance graphs on flanking easels, and a life-size bronze jaguar snarling defiance from the floor. Under the eye of the Queen, however, pigskin chairs and settees stand on a crimson carpet which describes a vast quarter-circle across the shining maple floor.

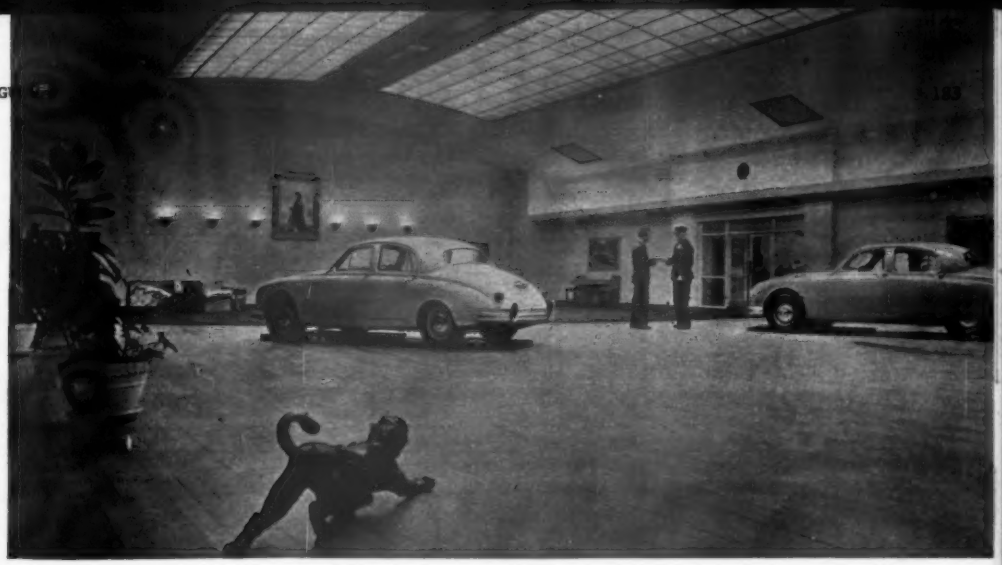
And there you have the genius of Jaguar styling—the economy of line, with its emphasis on the curve; the suggestion of restrained opulence; a taste based on tradition. You learn that Sir William Lyons is not quite satisfied with the frame of the Annigoni, and that several variants have been tried. No further clue is needed to the perfectionism that is behind the Jaguar.

The man is inseparable from the company, and both can justly be termed great. Sir William takes his place alongside Henry Ford, Lord Nuffield and Sir Herbert Austin—men whose greatness is measured by the distance they have climbed. Only 36 years ago his sidecars were being made in Blackpool, and those years have been punctuated by the well-known steps in his success: the Austin Swallow, the SS1 and II, the 90 and the 100. I remember an epic run through Glencoe in the latter, when the flanking mountains seemed to tremble with the rush of its passage. The SS100, unlike its highly refined

ENGINE and TRANSMISSION

Left: Gear box assemblies—with or without overdrive. Right: Broaching machines—one of the most accurate processes for repetition work





"A life-size bronze jaguar snarling defiance from the floor"

successors, was a car that really felt as if it was going fast when it reached the third figure.

Then the Jaguar: Sir William selected the name from a list of over 500 living creatures, and his taste, as usual, was unerring. What next? Only he can say, but there is no need to worry. Throughout the years people have said, "He can't go on doing it." Throughout the years he has.

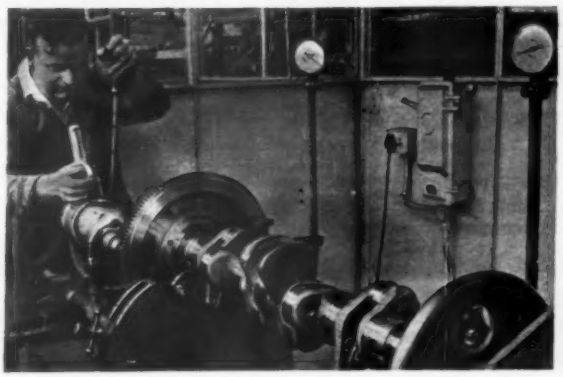
Yet he would be the first to pay tribute to those who have helped, and much of his genius lies in his handling of men. There is no rat-race at Browns Lane. The big men have big jobs and are expected to welcome responsibility. They are expected, also, to select and train their successors, and if they fail in either respect Sir William will probably ask why. Even so, there will be no harshness in the question. The Jaguar chief is human. "I can lift that 'phone," said one of the executives to me, "and ask Sir William any question I like. If it is a sensible one, I'll get an answer."

"You could call it a team," said another, "but the expression is timeworn. I prefer *esprit de corps*" (again that touch of the traditional). "Anyway, we help each other, going outside our direct responsibility to do so. We like it that way." I liked it that way, too.

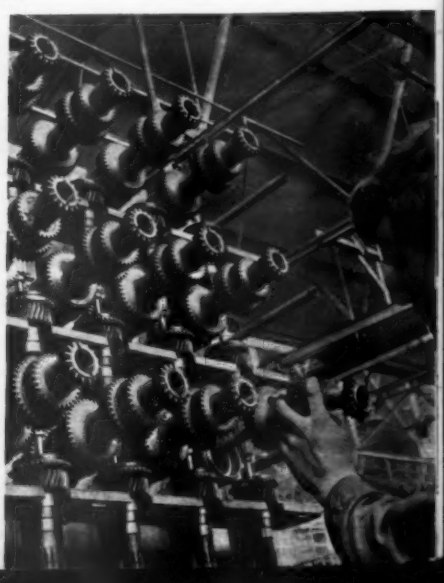
The spirit of an organization comes down from the top, and the Jaguar factory is yet another proof of it. Cheerfully risking an accusation of naivety, I would say that the men who make Jaguars do it because they like to, not just because it pays good money. The over-supply of student engineers for the seven-year training course tends to prove it. As someone has neatly put it: "Parents seem to want to get their boys into one of four places these days—Winchester, Eton, Rolls-Royce or Jaguar."

When an XK engine goes soaring up to five-five you think, if you are speed-conscious, of the loads imposed on the moving parts. When you see the detailed manufacture of these engines all anxiety is taken out of the contemplation. Consider the seven-bearing crankshaft, for instance. It is machined half at a time to minimize deflection, hand-balanced statically and machine-balanced dynamically. The hand operation is finely skilled, the shaft rolling lazily to a standstill between highly polished parallel bars. The operator strokes a counterweight to start it moving again, judging the response. A little of the EN16 is taken off here, a little there. When he is satisfied, the shaft is passed on.

Journals are hand-polished and the oil-hole edge is hand-



Left: A batch of XK power units on test, each in turn subject to individual scrutiny and checking. Above: Dynamic balancing of the crankshaft assembly. Below right: Stacking matched gear sets



BODYWORK *Left: Erecting hood irons with an ingenious template. Right: Individually matched woodwork sets, one crate per car*

Right From Every Angle . . .

stoned away to give an oval countersink. A magnetic crack detector searches for flaws (the D-type shaft is machined all over to make the search even more exhaustive). These shafts have beauties of their own. Singly, their perfection is something to touch; in mass, they make a lovely geometrical pattern.

Combustion chambers, too. They could be machined by a multiple tool, six at a time. Instead, the same tool does each to ensure the equalization of the hemispherical volume, and the process is unhurried, about a half-minute being occupied by low-revving drilling. The resulting chamber finish is high.

Throughout the engine shops a variety of fascinating items is being produced; in fact, a lot of fun can be had trying to recognize them. Panhard rod ends for the 2.4 and 3.4, for instance; spring anchor pins for the former, ball ends to the short, rigid gear lever (they might be spinning tops), multifarious distance pieces and heaps of tappet biscuits looking like the sixpenny production line at the Royal Mint.

The human element exercises its skill throughout, no more so than in the piston and connecting-rod assembly and the matching of pistons to bores. Con-rods are weighed, and two drams is the maximum tolerance permitted in a set of six; two thousandths of an inch is the maximum in the alignment and length check. Rod, gudgeon pin and piston are matched up by the operator's judicious feel for tightness, and the piston is given a code letter which is based on its diameter. When the cylinder block comes through, the bores will bear similar code letters, so that each bore can receive the correctly matching piston. This procedure is charted on labels that accompany each part, so that ultimately the complete manufacture of the engine is documented. If it should ever prove necessary, the entire history of a vital part of the engine can be traced back to the beginning.

Patterns from whole hides for upholstery

The men themselves match the product; they are visibly the aristocrats of car manufacture. "We attract the man who is interested in a steady, rewarding job rather than quick but less certain money. If circumstances demand a stepping-up of output it is met by harder work all round, not by engaging temporary personnel. Likewise the rough is taken with the smooth." Right now, the factory is "all out."

I am often asked to raise the bonnet of my XK140 just to give people the pleasure of looking at the engine; it is, indeed, a satisfying sight, the eye being immediately taken by the shining parallel made by the polished light alloy camshaft covers. The polish is a Jaguar indulgence of human weakness (though it makes for easy cleaning). Owners *like* their camshaft covers polished; and the pastel colouring of the blue and the golden special heads is similarly aimed at the customer. But these special heads are no mere window dressing. If you fit three HD8 (2in diameter) carburettors to an XK engine and eliminate the port bias that deflects the passage of the gases, you raise the b.h.p. from 210 to 250.

The assembly of these engines is satisfyingly expert. It stands to reason that torque wrenches are used, and even that oil should flow freely as the parts go together. But there is a petrol dip for each piston before it enters the bore, to remove surface impurities, and two re-checks at the same stage; one that the circlips are correctly in position and the second that the piston ring gaps are not aligned. By the time you reach the test beds you are not surprised that the running of 20 or 30 XKs should be a matter of comparative silence. Every engine in every Jaguar is dynamometer tested, individually.

How is all this done for around £1,500—or £1,000 without tax? The first part of the answer lies with Sir William. If he is told that there is no way of making a part or carrying out a process cheaper without a reduction in quality, he may well tell his informant to go away and devise a method—and such is the spirit of the place that they usually do! Cost control is kept within the factory by a policy of buying castings out and then doing the machining in, and everyone is on guard against the tendency of costs to rise; they have grasped the paradoxical axiom that to keep the price down is to keep the profits up.

Before the war, and even before the fire, the output might not have been big enough for this policy of detailed manufacture within the factory to pay big dividends. But since that disastrous night of 12 February 1957 Jaguar output is 100 per cent up . . . and if you want to hear about the best side of trade unionism, you should talk to the management about the co-operation over the fire. One way and another, that fire became almost an emotional manifestation.

Up to a point, body supply is typical of the rest of the motor industry. The biggest presses at Browns Lane are 100 tons, and only small body items are pressed. Big pressings for the sports models, as well as saloon bodies complete, come from Pressed Steel. There is, as is inevitable with a body of this calibre, a great deal of detail attention in body assembly, and the shells go through a £450,000 paint shop that is as fine as any in the industry.

But there is one joyous experience for the visitor that is

Above: Patterns from plywood for tool trays. Right: Spray booth for varnish on quality veneers

nre nowadays: a look round the sawmill. Here the quality woods that are used for facia panels and cappings in Jaguar bodies are cut, polished and despatched in what might be irreverently described as a coffin of bits and pieces specially matched for each individual car. The sawmill again reveals Sir William's unerring assessment of public taste. There is nothing like wood, he has said in effect. Therefore make it wood.

He does, as is fairly generally known, have a great deal to do with the styling of the cars. The single strong influence is obvious to anyone who has followed SS and Jaguar fortunes throughout the years, for today's Jaguars are logically the successors of those early SS cars. At Jaguar's they tend to smile at the idea of studio settings for elegant young men as aids to artistic inspiration (though a geranium or two is not despised on the drawing-office window-sill). Jaguar styling is three-dimensional, sculptural. A mock-up is made and altered until it is right, Sir William pacing round it, accentuating a curve here, straightening a line there, until it is right from every angle. Such a man, you might think, would paint in oils or landscape his garden. But if the more orthodox creativeness is there—and there can be no doubt that it is—car manufacture has not spared it the time in which to develop. Yet it would be strange indeed if it did not result in some classically artistic achievement; in gaining the Jaguar car the world may have lost a great sculptor.

What do they think of racing participation as a policy? They have little doubt as to its success as a means of publicity, but the deflection of brains and skill from production car engineering must be watched. Hence the temporary absence from the racing scene. Racing is a hard mistress—demanding both by day and by night. ("You'd find 'em all here on a Sunday, too.")

Characteristically, Jaguar's go out to win when they race, by making the maximum effort. They are not content to tag along with a place or two, one stage down from real success. When circumstances demand, they'll be back, and in the meantime the influence of the factory will still be felt. In fact, one of the Ecurie Ecosse cars—dusty and battle-scarred—was in the shops when I was there, and "Wilkie" Wilkinson was at the lunch table.

This is a factory that accomplishes miracles with an air of being used to it. The car itself is a bit like that. Sometimes, when my XK is thrusting along with 80-85 m.p.h. indicated and plenty more underneath the right foot, I think of its silently superb efficiency over 43,000 miles in two years of life. I like, too, to recall the curiously aspirated Spanish pronunciation of the J, putting almost the snarl of the jungle jaguar into the mouths of admirers on the kerbs of Madrid last summer. It is one of the few British cars that will stand comparison with the beauties of that splendid capital. And this year it will go to Andalusia, finding, I hope, the very home of the magnificent flamencos of Spain.

Like to like. The flamenco allies ferocity with beauty and a pulsing rhythm. What else does an XK do?

* * *

"I'll take a 3.4 tonight." The voice is Sir William Lyons', and there will probably be about ten minutes between the telephone message and the required appearance of the car at the door, straight from the production line. No time to "fix it," even if you *could* pull the wool over the chairman's eyes. But there is no need to try. The design is right, the manufacturing methods are right and the men who make it are right. So the product is right, too, and the chairman can safely be given the next in from final test for his overnight transport.

MICHAEL BROWN.

Left: Horse-hair padding for the drop-head coupé. Centre: Lead filling—nothing must spoil the line. Right: Tailpiece: welding exhaust brackets

The new styling treatment of the IIA gives a cleaner appearance to the front of the car. There are now head lamp hoods; and the side panel adds an impression of length to the car

Autocar ROAD TESTS 1695

Singer Gazelle IIA

CONVERTIBLE

SHORTLY after the introduction of the Series II Sunbeam Rapier models in February of this year, Rootes decided to fit the same new 1,494 c.c. power unit (with single Solex carburettor) in the Gazelle as an alternative to the overhead camshaft Singer engine. The new version became the Gazelle Mark IIA, and the convertible version is the subject of this test. A few Singer-engined Gazelles are still available, but as the figures on the right illustrate, as far as performance is concerned, the new Rootes unit is more efficient.

The test car started well hot or cold, and in warm weather there was no need for use of the choke. It could be driven away almost at once after a cold start without hesitation or stalling. On the under-surface of the bonnet there is a layer of sound-damping material, earthed to the body to prevent radio interference, and the engine silence to which this contributes is remarkable. Normally the engine is scarcely audible from inside the car, and even when turning at maximum revolutions in the indirect gears, it remains exceptionally quiet.

Response to the throttle is immediate, and in normal use the engine pulls vigorously and smoothly, so that the Gazelle quickly gives the impression of being a lively car. In traffic, it will trickle along smoothly at low revs but it will not pick up speed smoothly below 20 m.p.h. in top gear. At the other end of the scale the engine revs freely up to a usable maximum of nearly 6,000 r.p.m. When it is fully warmed up, the tendency to run-on after switching off is a nuisance. This might be eliminated if super premium, instead of premium petrol, was used, but the 8.5 to 1 compression ratio scarcely warrants this, and there was no pinking.

In the indirect ratios there is a prominent (but not unpleasant) whine from the gear box, particularly noticeable on third gear. The choice of ratios is the familiar Rootes arrangement in which first is an emergency low, and second gear is generally used to start from rest. As there is a lower ratio for emergency use when heavily loaded or on hills, second gear could well be appreciably higher than it is. Normally no more than 25 m.p.h. is reached before a change up is made. Third gear gives a range of performance in normal use from 15 m.p.h. to around 45 m.p.h.

In *The Autocar*, 9 November 1956, a Road Test of the Singer-engined Gazelle was published; this was the saloon version, weighing ¼cwt less than this IIA convertible. The following table presents a representative performance comparison between the two cars.

From rest through gears to:—	Rootes engine	Singer engine
M.P.H.	sec.	sec.
30	5.9	6.1
50	14.3	15.6
60	21.4	23.6
70	35.0	36.9
Standing ¼-mile	22.4	22.9
20–40 (Top gear)	10.1	10.9
30–50 (Top gear)	11.1	11.7
40–60 (Top gear)	13.3	14.2
50–70 (Top gear)	17.7	22.2
Overall petrol consumption	31.4 m.p.g.	30.2 m.p.g.

At an extra cost of £64 including purchase tax, Laycock-de Normanville overdrive is now available on the Gazelle, operating on third and top gears. This was fitted to the test car, and it was on third gear in particular that the overdrive proved really useful. In town traffic it was convenient to remain in third for long periods, bringing in the overdrive when required by the well-placed finger-tip switch behind the steering wheel. On the open road the instant change into overdrive third was perfect for accelerating, and would see the car comfortably into the 60s with an ultimate maximum of more than a true 80 m.p.h. The gear lever could be moved straight to top with overdrive still engaged, in which ratio the car would cruise at any speed of which it was capable: certainly 75 m.p.h. could be sustained. In normal top the Gazelle will cruise at 65-70 m.p.h. The change into overdrive, in third or top, occurred very smoothly while the car was accelerating.

The steering column gear lever has a positive and easy movement, and there was seldom difficulty in engaging any particular gear. In the upper plane of movement, between third and top, it is particularly convenient, and changes can be made without removing a hand from the wheel. There is no spring loading between the upper and lower pairs of ratios.

At the same time as the new engine was introduced, a change was made in the steering box, which is now a recirculating ball type by Burman. The result is an appreciable improvement in precision and, particularly, in the light-

Left: With the hood in the coupé-de-ville position, the car gives pleasantly airy motoring without excessive draughts. Right: Accessibility to fillers, the dipstick and the battery is good, but the engine compartment is a little crowded for other attentions, and a simple operation such as removing a sparking plug from No. 3 cylinder is difficult. This, and the very limited toolkit in the luggage locker, suggest that owner maintenance is discouraged

Singer Gazelle IIA . . .

There is no need to force the hood into its well, and the small tonneau cover, which is permanently fixed to the back of the rear seat, fastens neatly over it. Part of the brightwork is of stainless steel

ness of the control. At speed there is no wander; and the car can be manœuvred at walking speed without effort. Road shocks are not felt directly through the wheel, but unfortunately there is marked scuttle shake over all but the smoothest road surfaces. Reinforcement of standard bodies for the construction of convertibles is always a problem for manufacturers, and on the Gazelle the results have not been fully successful.

Firmness of the suspension accentuates the body looseness, but the wheel actions are well damped, and an extremely comfortable ride—such that passengers often commented favourably on it—is one of the salient features of the car. The Gazelle corners exceedingly well, and can be driven almost as a sports car on winding roads, exhibiting near-neutral balance; there is some roll, but only when the full advantage is taken of the Singer's cornering abilities is there any sound from the Goodyear tyres. This high degree of stability is maintained on wet roads, when the car remains very easy to control.

Suspension at the front is by coil springs, with an anti-roll bar and semi-trailing wishbones. When the laden car is driven fast over potholes or unmade roads, it seems that the vertical wheel movement is too restricted for full absorption of the surface irregularities; in the same conditions it is also noticed that there is rather limited ground clearance below the petrol tank and other vulnerable parts.

Under heavy braking the car remains stable, and the retardation necessary for stops from high speed is available, although fairly heavy pedal pressures are required. There was no fade either during the brake testing or in spells of hard driving. The hand brake is conveniently placed to the right of the driving seat and it holds the car effectively.

Well-designed Convertible Hood

Some improvements have been made in recent years in the construction and sealing of convertible hoods, and the current Singer version is admirable. A stout vertical hoop provides the main structure of the hood above the front seat squab, and it locks in position when pulled forward firmly; a knurled wheel on each side of the rear compartment frees it to lower the hood. At the windscreen, two tongues in the leading edge of the hood locate in grooves in the upper screen rail, and there is no direct locking arrangement. The joint above the windscreen is secured by knee-action struts, which run forward from the main supports and are hinged in the centre with knurled locking nuts. The result is a hood which can be changed, single-handed, from fully open to fully closed in a couple of minutes—or even more readily to the intermediate coupé-de-ville position—and the sealing is perfect. The car was driven in a downpour without leakage, but as there is no proper gutter, water ran off the hood into the car when the doors were opened. The hood folds away into a flexible well hanging down at the back of the luggage locker, but it makes little reduction in luggage accommodation. In fact, there are few features of the convertible which are inferior to those of the saloon version. On this comparatively young example of the model there were no hood rattles.

Many motorists who only occasionally carry a full complement of passengers regard two large, easy-access doors as preferable to the four-door arrangement. From either side the car can be locked in a moment by reaching across to press down the locking knob in the window-sill of the far door, and using the key to lock the other door from the outside.

All-round visibility is excellent for a convertible, and the flexible rear window is wide and deep. The steep rake of the curved-glass windscreen brings the screen pillars well back where there is little obstruction to vision on corners. The quarter lights in the doors can be swivelled forward to act as air scoops in warm weather. The large side windows wind away completely into the doors, but the winders are low-geared, as well as being stiff to operate.

There are self-parking, single-speed windscreen wipers, which act silently and clear a large area of the screen. Winking indicators flash from the side lamps at the front and from separate amber lamps at the rear, and are controlled by a convenient finger-tip switch below the steering wheel, near to the overdrive switch. The windtone horns have a powerful note. The fresh-air heater (£12 extra) delivers warm air very soon after a cold start, and should prove fully adequate in cold weather.

All of the minor controls are grouped below the instruments around the clock—an optional extra. This central part of the facia is metal painted in imitation of wood, which matches well with the walnut trim used on the facia and along the doors. Three dials are set centrally in the wood; the middle one contains the speedometer, total and trip mileometers. To the left is a smaller dial containing the oil pressure and petrol gauges, and in its pair on the right are an ammeter and coolant thermometer. The instruments are easy to read, and well lit at night; the switch for the panel lights is on the underneath of the facia, to the right of the drawer-type ashtray. The roomy compartment on the left of the facia has a lockable lid, and there is space for small articles on a shelf to either side of the steering column.

Added to the already-mentioned smoothness of ride is the advantage of well-designed seats which give support in the right places and do not become uncomfortable on long journeys. Reasonable knee-room is allowed for rear seat passengers, but even quite short drivers would have preferred an increase in the range of front seat adjustment for use when the rear of the car is unoccupied. Set back as far as it would go, the seat placed the driver too near to the pedals, and uncomfortable contortions of the ankle muscles resulted.

The width allows three-abreast seating, and when the car was tried with six on board there was no noticeable deterioration in the handling; if anything, the stability and balance were even better. However, lack of springing in the central part of the seat above the transmission tunnel soon brought complaint from whoever sat in the middle of the rear compartment.

A useful increase has been made in the capacity of the petrol tank from 7¼ to 10 gallons, giving a normal range of at least 300 miles between refuelling stops. Driven as

Carpets are fitted in the rear compartment and over the gear box housing, and the remainder of the front floor is covered in moulded rubber which looks durable and can be removed easily for washing. The front seat squab is divided, and folds forward and to the centre to give access to the rear compartment. There is an ashtray for rear occupants in the back of the driver's seat

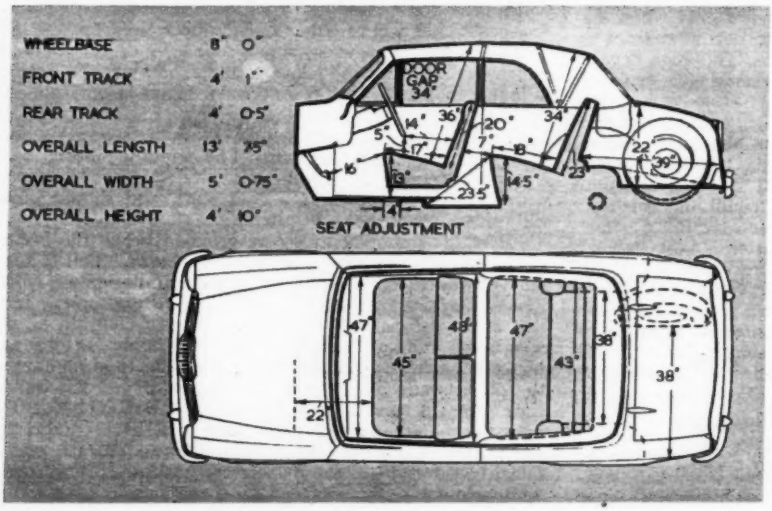
hard as it would go, the car only once returned a fuel consumption below 30 m.p.g. (at 29.3), and owners who do not use the full performance of the car should have no difficulty in obtaining 33-35 m.p.g. on the open road.

Styling changes on the Mark IIA include a redesigned front with head lamp hoods, and chrome surrounds above the bumper embracing the side lamps; the chrome rubbing strip on the body sides now tails off behind the back wheels, instead of continuing to the rear lamp cluster as before. Whitewall tyres are on the list of optional extras, but the test car had detachable whitewall trims. They are a poor styling addition: kerbs and tyre flexions break the adhesives, and the first time the car was driven at over 80 m.p.h. in the laden condition both the rear wheel trims ripped off dramatically, and were last seen flying up into the air.

The Singer Gazelle is a good intermediate between the more utilitarian Hillman Minx and the more sporting Sunbeam Rapier; in it Rootes offer the comparatively rare combination of a compact four-seater car with room for an occasional six, showing sporting characteristics and with the stamp of quality in its construction and appointments. In keeping with this last attribute is the high degree of mechanical silence which the manufacturers have achieved. This Gazelle—finished in pippin red and pearl grey—has the additional credit of ranking among the several cars of those tested in recent months which constantly attracted the unconcealed admiration of passers-by.

SINGER GAZELLE IIA CONVERTIBLE

WHEELBASE	8' 0"
FRONT TRACK	4' 1"
REAR TRACK	4' 0·5"
OVERALL LENGTH	13' 7·5"
OVERALL WIDTH	5' 0·75"
OVERALL HEIGHT	4' 10"



Scale ½in to 1ft. Driving seat in central position. Cushions uncompressed.

PERFORMANCE

ACCELERATION:
Speed range, Gear Ratios and Time in Sec.

M.P.H.	*3.61 to 1	4.78 to 1	*5.39 to 1	7.13 to 1	11.81 to 1	15.22 to 1
10—30	—	—	—	7.2	4.8	—
20—40	—	10.1	—	6.9	—	—
30—50	16.1	11.1	10.1	10.4	—	—
40—60	19.5	13.3	13.2	12.8	—	—
50—70	—	17.7	20.6	—	—	—

*overdrive.

From rest through gears to:

M.P.H.	sec.
30	5.9
40	9.6
50	14.3
60	21.4
70	35.0

Standing quarter mile 22.4 sec.

MAXIMUM SPEEDS ON GEARS:

Gear		M.P.H.	K.P.H.
O.D. top	(mean)	81.5	131.2
	(best)	84	135.0
Top	(mean)	82.2	132.0
	(best)	84.5	136.0
O.D. 3rd		81	130.4
3rd		61	98.2
2nd		35	56.3
1st		25	40.2

TRACTIVE EFFORT:

	Pull (lb per ton)	Equivalent gradient
Top	235	1 in 9.5
Third	340	1 in 6.5
Second	465	1 in 4.8

BRAKES (at 30 m.p.h. in neutral):

Pedal load in lb	Retardation	Equiv. stopping distance in ft
50	0.27g	112
75	0.45g	67
100	0.70g	42.2
110	0.82g	36.8

FUEL CONSUMPTION:
M.P.G. at steady speeds

M.P.H.	Direct top	O.D. top
30	44.4	55.6
40	42.0	50.0
50	37.0	43.7
60	31.7	36.3
70	25.2	27.3

Overall fuel consumption for 1,281 miles, 31.2 m.p.g. (9.2 litres per 100 km.).

Approximate normal range 30-36 m.p.g. (9.4-7.9 litres per 100 km.).

Fuel: premium grade.

TEST CONDITIONS: Weather: Dry, brisk wind. Air temperature, 63 deg. F.

Acceleration figures are the mean of several runs in opposite directions.

Tractive effort obtained by Tapley meter.

SPEEDOMETER CORRECTION: M.P.H.

Car speedometer:	10	20	30	40	50	60	70	80
True speed:	12	21	29	38	47.5	57	67	78

DATA

PRICE (basic), with convertible body, £665.
British purchase tax, £333 17s.
Total (in Great Britain), £998 17s.
Extras: Radio to choice. Heater £12. Overdrive £42 10s, total inc. P.T. £63 15s. Bucket seats £10, total inc. P.T. £15. Fog or driving lamp £3 14s 6d. Clock £3 13s 6d, total inc. P.T. £5 10s 3d. Spare wheel cover £1 16s 7d. Centre arm rest £2 17s 6d.

ENGINE: capacity, 1,494 c.c. (91.16 cu in).
Number of cylinders, 4.
Bore and stroke, 79.0 × 76.2 mm (3.11 × 3.09in.).
Valve gear, o.h.v., pushrods.
Compression ratio, 8.5 to 1.
B.H.P. 56, nett, 60 gross at 4,500 r.p.m. (B.H.P. per ton laden 45.8).
Torque, 82.8 lb ft at 2,300 r.p.m.
M.P.H. per 1,000 r.p.m. in top gear, 15.5.
M.P.H. per 1,000 r.p.m. in overdrive, 20.5

WEIGHT (with 5 gals fuel): 21.6 cwt (2,415lb).
Distribution (per cent): F, 55.4; R, 44.6.
Laden as tested, 24.6 cwt (2,751 lb).
Lb per c.c. (laden), 1.84.

BRAKES: type Lockheed.
Method of operation, hydraulic.
Drum dimensions: F, 9in diameter; 1.75in wide. R, 9in diameter; 1.75in wide.
Lining area: F, 60.5 sq in; R, 60.5 sq in (98.5 sq in per ton laden).

TYRES: 5.60—15in.
Pressures (lb sq in): F, 24; R, 24 (normal). F, 24; R, 26 (fully laden).

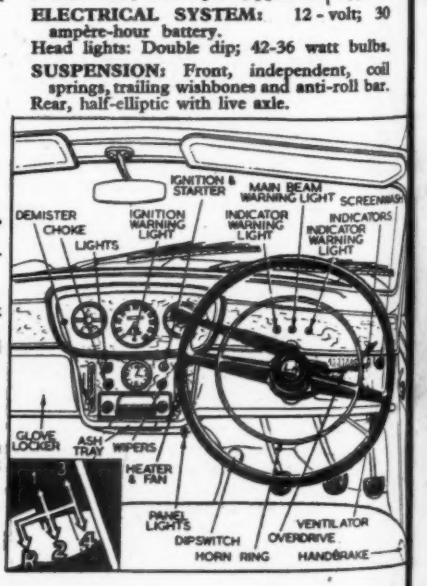
TANK CAPACITY: 10 imperial gallons.
Oil sump, 8 pints.
Cooling system, 12.3 pints (13.3 with heater).

STEERING: turning circle:
Between kerbs, 34ft 4.5in.
Between walls, 36ft 3in.
Turns of steering wheel from lock to lock, 3¼.

DIMENSIONS: Wheelbase, 8ft.
Track: F, 4ft 1in; R, 4ft 0.5in.
Length (overall), 13ft 7.5in.
Width, 5ft 0.75in.
Height, 4ft 10in.
Ground clearance, 7in.
Frontal area, 19.6 sq ft (approximately).

ELECTRICAL SYSTEM: 12-volt; 30 ampère-hour battery.
Head lights: Double dip; 42-36 watt bulbs.

SUSPENSION: Front, independent, coil springs, trailing wishbones and anti-roll bar.
Rear, half-elliptic with live axle.



Disconnected Jottings

BY THE SCRIBE
Barry Appleby Drawings

Unusual Policy

POLICY regarding the intervals at which one should change cars is always a matter for argument. There are two schools of thought. Some believe in changing cars quickly, in case they depreciate, or something goes wrong with them, or they might need servicing, and so on. Others believe that you should get full value, and even when cars are dropping to pieces, they must hang on. Most of my British readers have a garment, a tweed coat perhaps, which has constantly to be defended against wives, jumble sales and dustmen. (Beg pardon: Unwanted by-products municipal removal operatives).

All that goes for lawful owners. Car thieves are more constant, and they want to get rid of a hot car within 24 hours. But not so a Yorkshire car thief. In July 1956 he stole a Minor from

Within 24 hours

Scarborough Esplanade car park. In August 1957 he replaced it, and took instead a later Minor. Recently this car was returned to the place from which it was acquired, and a Wolseley 1500 vanished. The returned cars had all covered about 15,000 to 17,000 miles during their absences and had been well looked after.

My specialized knowledge of motoring helps me to aid the police. They are looking for a commercial traveller who is fond of cars—more narrowly, Nuffield products—and he spends his holidays at Scarborough. I dare say the net is tightening already.

False Controls

THE stolen cars were locked, by the way, but this is not a very good security against really determined car thieves. The sort of artificially induced minor breakdown which would take a good garage a week to trace is a better bet. I recall, long ago, leaving a somewhat jury-rigged old open car in Leicester Square; absent-mindedly I left the ignition key in place, but fortunately the facia was far from standard. When I returned the battery was run down, and the knob marked "Choke" was pulled out. In fact, this was the home-made throttle—the choke was operated by a length of hairy parcel string.

Defeated

BOY joyriders, and soldiers who have missed the last train and are in danger of being AWOL, are the multitudinous infantry of car thieves. Professional thieves steal new and valuable models, but boys and young soldiers usually "borrow" something not too valuable, and which may preserve them from the possible stigma of being thieves. A vintage Austin Seven is particularly vulnerable, because that is what Dad had, so they know how to drive it.

Pinchproof

SHOULD I ever steal a car, it would be one of that kind, for there are complications in current cars. Four times during the past month I have been defeated by bonnet catches. In cases (a) and (c) I couldn't open the thing at all; in cases (b) and (d) I opened it, but was completely unable to close it again. My intentions were honourable, so I was able to summon help.

During the same month, I was effectively kept at bay by a textbook example of the car door key which would not open the door. I also encountered a car with an automatic clutch which engaged when the engine was speeded up: it was teamed with a throttle which yielded no results under normal pressure, until the point when something gave, when the acceleration, and take-up of the drive, could be quite disconcerting.

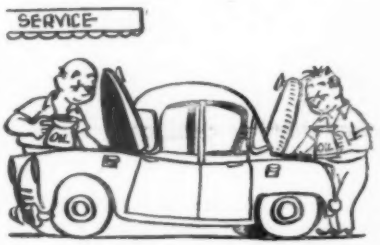
Secure in the knowledge that I was lawfully in possession, had an insurance certificate and all that, I pressed on; bus conductors looked nervous as my leaping attacks on their tail panels were checked inches short. At least, I thought, a policeman would have to ask me my name and address; he would not know it already and greet me with a familiar, "Hello, Snitcher, nabbed again." A thoroughly thief-proof model, that—there should be a specially low insurance premium.

Leaping assaults

Power Station

LEARNING that the refrigeration provisions of a car air-conditioning unit need to have the power of 50 domestic refrigerators, I find my hopes of possessing one are fading.

I cannot agree that the high-horsepower engine is doomed. It may become more powerful, to drive all the electrics of the cars of the future. Motor yachts have a main engine, and a small auxiliary engine for working the electric light system when at anchor. Cars of the future may reverse this principle, with a main engine for



Main and auxiliary engines

driving the dynamo, and a small auxiliary engine to roll the vehicle on a few yards each time the world traffic block moves on.

Static traffic will increase the demand for car air-conditioning, central heating, television, radio, house-power interior lighting for playing cards, and typing and sewing—and also increase the demand for U-Bild-It helicopters.

Matter of Taste

IT is not true that women decide on the choice of a family car, for it is one of the last masculine preserves, although it is customary to allow the woman to choose the colour scheme and the seat covers. But it might be better if she did choose cars. The living room of most married couples, dictated by the female, is a great deal more neat, elegant and charming than the showy car of the family, with its blown-up appearance and vulgar decoration, which the male chose. There is more sense in the styling of many European cars today, but much of the current decoration is still neurotic and uncertain.

News and Views

Land-Rovers of the Automobile Association's Highland Patrol, which has gone to the rescue of over 160,000 members in trouble on lonely Highland roads in the last five years, are now in radio contact with the headquarters at Inverness (see *right*)

Westminster Commentary

Rules for Motorways.—It is a triumph for Mr. Watkinson that the opposition to his decision to try out the new motorways without an upper speed limit proved nothing like as heavy as was expected, and the experimental regulations for the Preston by-pass, which will come into force when the road opens in November, were approved without a division. No two M.P.s were agreed where a limit should be placed—it varied from the 70 m.p.h. of the pedestrians' spokesman, Mr. Page, to the "realistic" 100 m.p.h. of Vice-Admiral Hughes Hallett, a keen motorcyclist, who said that only last month he saw a dream motorcycle under construction, designed to cruise at 105 m.p.h. "I must say that if I could afford it," he added, "I should very much like to buy it." These views confirmed Mr. Watkinson's opinion that the more advice he received, the more sure he became that they could not make sensible final regulations until experience of using a motor road had been gained.

Mr. Nugent, Parliamentary Secretary, issued a warning about the by-pass being used as a race track. These roads, he said, were being built for safe fast travel, and it was thought that the right plan would be to allow drivers to judge their own safe speed; he hoped that faith in the good sense of drivers would be justified. Quite obviously if people used these roads as a race track they would make them a danger not only to themselves but to everyone else. If the faith in drivers was proved wrong there would be no alternative but to apply a maximum speed limit.

Car Insurance. A special committee of inquiry into the present system of car insurance, with a view to halting higher charges, reducing premiums to the careful driver, and bringing about greater safety on the roads, was urged on the Minister by Mr. A. Palmer, M.P. Mr. Watkinson's reply was disappointing, for many will go a long way with Mr. Palmer in his contention that there is a widespread feeling that the majority of careful drivers have to pay far too much to subsidize the minority of people "who should not be on the roads at all." Mr. Watkinson rejected the idea outright—"the manner in which motor insurance is conducted, the premiums charged and any allowances given are matters within the discretion of the insurance market, and I see no reason for the appointment of a committee of inquiry."

Parking Meters. It is difficult to share the Minister's view that the parking meter scheme in Mayfair is "a success," and it is significant that the St. Marylebone Borough Council is the only other authority in central London that has submitted a similar scheme. This plan has been the subject of a public inquiry, and the inspector's report has now gone to the London and Home Counties Traffic Advisory Committee, who will advise the Minister later in the year. Local authorities are never backward in trying revenue-producing schemes, but in this case obviously they do not share the Minister's optimism over the Mayfair experiment.

L-Licences. The one outstanding section of the Road Traffic Act still not in operation prohibits the continuous renewal of L-Licences without taking a test. There is so far no sign of it being implemented, the excuse being offered that it will unduly lengthen the waiting time for a driving test. That would seem a weak reason, but if the numbers are so large, then the disquiet felt in road safety circles is justified.

Radio for the Highlands

TWO-WAY radio will now link the Automobile Association's Highland Patrol with the headquarters office in Inverness. The Patrol operates in the far north of Scotland, and the new radio coverage will extend north as far as Wick, east to Lossiemouth and Elgin, south to Drumnadrochit and west to Achnasheen and Lairg. It extends the A.A.'s radio network in the British Isles to a total of 44,000 square miles. The telephone number for contact with the new radio network in Scotland is Inverness 213.

Booming Exports

SALES of foreign cars in the United States since the beginning of 1958 are expected next week to pass the total for the whole of 1957, and to go on, at the present rate of selling, to a total of around 385,000 for the whole year.

Motor Show Opening

MR. R. A. BUTLER, the Home Secretary, is to open the Earls Court Motor Show this year. As a reminder the Show dates are Wednesday, 22 October to Saturday, 1 November.

Diesel Taxis for Brussels

A BRUSSELS taxi firm has ordered 75 Chevrolets fitted with Perkins 4-cylinder diesel engines. The first ten of them have already been delivered at an official ceremony at the World Fair.

Tungsten Spraying Development

AN important advance in the field of metal spraying now places tungsten carbide among the range of materials available for hard facing by metal spraying. This development, achieved by the Metallizing Equipment Co., Ltd., will enable tungsten carbide to be used at high speed and low cost in engineering where a hard face is required to withstand extreme abrasion. It is not likely to have direct applications, at this stage, in the automobile industry.

Channel Crossings Record

OVER the August Bank Holiday weekend Dover Harbour Board handled 8,925 accompanied vehicles consigned for or returning from the Continent. The figure is a record.

Chrysler-Ford Deal

ITS minority share in the French Simca company has been sold by Ford of America to the Chrysler Corporation. The sale amounts to 443,973 shares, or 15.2 per cent of the shares outstanding. They were acquired originally when French Ford merged with Simca in December, 1954. The French sales subsidiary Ford France will continue to function at Paris as before.

Next Week

- ★ Road Test—3-cylinder Berkeley Sports
- ★ Touring—Asia Minor by Morris Minor.
- ★ Aston-ishing Martin—a supercharged DB2-4
- ★ Practical hints on rallying
- ★ News, the Sport and all the regular features.

Extras for 300D

POWER steering and an air conditioning unit (including humidifier) are now available as optional extras on the Mercedes-Benz 300D saloon, on which fuel injection is standard.

Mistral in Production

AFTER a seven-months lapse since its road trials, the tiny New Zealand-made sports car, the Mistral, is now in production in Christchurch. The car is developed from a prototype which was raced successfully last season. Modifications to the production model include two moulded box-section doors, a luggage locker and recessed head lamps. It will be available over there in kit form for around £600, or assembled at about £900.

It is powered by a Ford Ten engine and has a Lotus-type front, with independent front suspension and a rather unusual coil springing and A-frame rear suspension coupled to a torsion bar.

OUR CHIEF PHOTOGRAPHER John Yoxall, who is also an authority on caravans and caravanning, has sent us this unusual picture as witness to the success of his holiday venture—to take a van from London to the Arctic Circle. The stone cairn marks the intersection of latitude 66.30

Car Rental Expansion

DAIMLER HIRE, LTD., announce first moves in their planned nation-wide car rental network, with the negotiation of agencies in Liverpool and Plymouth. It is planned to have similar agencies in all important provincial centres, but priority is being given to those with international transport links.

Fly-over Road for Scotland

"THE first fly-over road in Scotland is to be built at Gleneagles," said Mr. Stuart Malcolm at the opening of the "New Roads for Old" exhibition in Perth last week. He added that the work the Government had in progress was much appreciated, but was not nearly as much as was required. Opening the exhibition, Lord Provost John Buchan of Perth said: "Some of us who are members of town councils are well aware of the question of 20th-century traffic using 19th-century roads."

NEW 500 SPORTS SALOON FROM FIAT

A SPORTS version of the diminutive Fiat 500 is announced from Turin. Production prototypes won the 500 c.c. class in the recent Hockenheim 12-hour race, and seven of the 13 finishers in the Liège-Brescia-Liège rally were this model, which finished first, second and fourth in general classification.

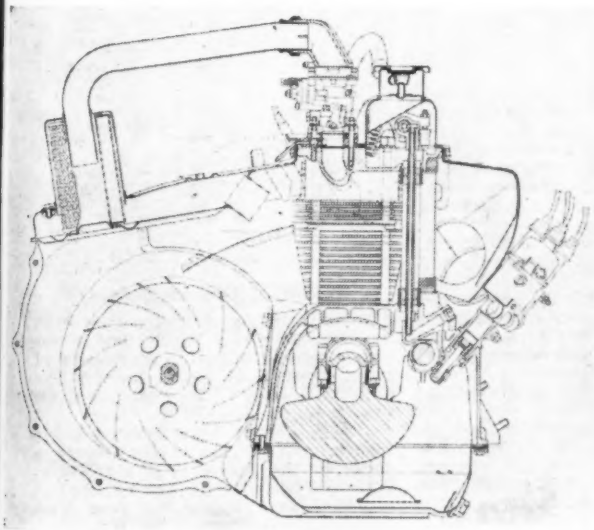
Outwardly the only change to the body is a steel roof panel for increased rigidity, and a flash along each side of the body. The main changes are in the engine, the capacity of which has been increased from 479 to 499 c.c. by enlarging the bore from 66 to 67.4mm, the stroke being unaltered at 70mm. Rear axle gearing has been raised by changing the ratio from 5.12 to 4.87.

When the 500 was first introduced in July, 1957, it had a compression ratio of 6.55 to 1 and an output of 13 b.h.p.—the form in which it was tested by *The Autocar*, when it had a mean speed of 49.5 m.p.h., with a best of 54 m.p.h. Since then the compression ratio has been increased to 7.0 to 1, which raises the output to 16.5 b.h.p. For the sports version the combination of increased capacity and a compression ratio of 8.6 to 1 has further raised the maximum power to 21 b.h.p., with a claimed maximum speed of between 65 and 68 m.p.h.

There is a new camshaft which increases valve lift and modifies the timing, increasing the overlap from 28 deg to 37 deg, although the total angles of opening are only fractionally greater. Material of the camshaft has been changed from cast iron to case-hardened steel. In conjunction with this change, the diameter of the inlet valves has been increased by 2mm and the exhaust by 1mm, each having stellited seats to resist wear.

The combustion chamber form has been slightly modified to match the larger cylinder bore, and the ports are polished; heavier valve springs also are fitted. The same diameter of carburettor is used (Weber 26mm) but the choke has been enlarged from 21 to 22mm. The cooling fan runs more slowly, to reduce its power absorption.

At present the model is available only with left-hand drive, and obtainable in this country to special order; the selling price has not yet been fixed.



The Fiat 500 engine (left) is a vertical twin four-stroke, air-cooled unit with two main bearings and a balance weight (shown in section) between the connecting rods. Below: steel roof panels replace the folding head of the normal saloon

Formula 2 at Clermont-Ferrand

THE Grand Touring race at Clermont-Ferrand a fortnight ago was watched by more than 70,000 spectators. Gendebien in his G.T. Ferrari led, followed by Trintignant and three other Ferraris. Innes Ireland was out to overhaul them, with his eye on the prize for the leading car at half-distance irrespective of class. After half-an-hour the smaller cars were being lapped and in some instances this produced breath-taking moments, as the course was really too narrow for the large Ferraris. The 2-litre class was led by Feth and Testut in Porsches. Innes Ireland held a commanding lead in the 1,300 class and was followed by two other Lotuses. Ireland caught up Gendebien and went ahead on his 11th lap; he held this lead until the end of the race, winning the class easily.

He was followed home by Vidilles and Dalton to give Lotus 1, 2, 3, in the 1,300 class.

The lead for the unlimited class was fought out between the three Ferraris of Gendebien, Trintignant and Mairesse. A Panhard driven by Hemard turned over in the Esses and left pieces of itself and the banking all over the road; soon another Panhard turned over on the down hill stretch and, once more, yellow flags were flying. The standard of organization was extremely good and the injured drivers were quickly removed to hospital by helicopter.

The 2-litre class was lead by the Porsches of Feth and Testut; towards the end of the second hour José Behra, who had taken over Marx's Porsche, began to make his presence felt; he overtook the two A.C.s driven by Whiteaway and Anthony and moved up into the third position.

The last hour saw little change in the overall position but Gendebien ran out of road and came round to the pits with bad body damage; hasty work with hammers enabled him to complete his last lap in the 12min required by the regulations, but this excursion put him to third place in the class, which was won by Trintignant followed by Mairesse.

The 2-litre class underwent radical change when the leading Porsche turned turtle. The other leading Porsche then broke its crankshaft; this gave José Behra the class win, followed by Whiteaway and Anthony in A.C.s. The Lotus victory in the 1,300 class tended to overshadow the fine efforts of the Alfa Romeo saloons which were driven extremely fast.

When the formula 2 race started, Trintignant went into an immediate lead, which was maintained to the end of the race; the real excitement of the day was the battle for the minor places. Tony Marsh held second place at first, followed by Ivor Bueb, Storez in a Porsche Spyder, then George Wicken and Stuart Lewis-Evans. John Campbell-Jones had had the misfortune to break his gear box at the start, and on lap 5 George Wicken came into the pits and retired. Lewis-Evans began to move up and by the eighth lap was in third position. On lap 10 Trintignant had a lead of 35sec over Tony Marsh, who by now was being pressed by Stuart Lewis-Evans; these two battled for four laps until finally on the fourteenth Lewis-Evans took second place, and began catching up slightly on Trintignant who was obviously under pit orders and had everything well under control. On lap 19 Ivor Bueb overtook Tony Marsh and then, on his last lap, proceeded to go even faster and break the lap record. In so doing he overtook Lewis-Evans and finished in second position, crossing the line about four feet ahead of Lewis-Evans and going flat out.

For breaking the lap record Ivor Bueb won the Challenge Louis Rosier—a magnificent piece of carved stone; Trintignant, having won both races of the day, left the prize-giving ceremony assisted by a few helpers, carrying the cups, while Innes Ireland also was unable to carry all of his awards. The British competitors acquitted themselves well for, in addition to their placings, not one British car was involved in an accident of any sort. The vast crowd that watched was the biggest outside Le Mans and Rheims ever to attend a motor race in France.

M. ANTHONY

RESULTS

Formula 2 Race: 1, Cooper (M. Trintignant), 1hr 20min 55.3sec; 2, Lotus (I. Bueb), 1hr 21min 17.5sec; 3, Cooper (S. Lewis-Evans), 1hr 21min 18.5sec; 4, Cooper (A. Marsh); 5, Porsche (C. Storez); 6, Cooper (B. Naylor); 7, Cooper (H. Zweifel); 8, Lotus (Gibson); 9, Cooper (R. H. Parnell); 10, Cooper (Goethals); 11, Cooper (N. Barclay); 12, D. B. (Laureau); 13, Porsche (Buchet); 14, Gordini (J. Cales); 15, Lotus (D. Taylor).

Gran Turismo Race: 501 to 750 c.c.: 1, Panhard (Vinatier); 2, Panhard (Masson); 3, Panhard (Pailler). **751 to 1,000 c.c.:** 1, D. B. (Laureau); 2, Alpine Renault (Michy); 3, D.B. (Frassinet). **1,001 to 1,300 c.c.:** 1, Lotus (Ireland); 2, Lotus (Vidilles); 3, Lotus (Dalton). **1,301 to 2,000 c.c.:** 1, Porsche (José Behra); 2, A.C.-Bristol (Whiteaway); 3, A.C.-Bristol (Anthony). **Over 2,000 c.c.:** 1, Ferrari (Trintignant); 2, Ferrari (Mairesse); 3, Ferrari (Gendebien).

National Great Auclum

A THUNDERSTORM before the start of the speed hill-climb meeting at Great Auclum, near Reading, last Saturday, delayed first climbs for some minutes while a torrent of water on the upper part of the quarter-mile course subsided. This ruled out any chance of a new record for the hill at this national meeting organized by the Hants and Berks M.C.

However, conditions improved, and while no one had enough practice in the dry for an all-out crack at the record (held by A. E. Marsh with his Cooper-J.A.P. at 20.6sec), R B. James in a 500 Cooper put up a very creditable f.t.d. at 22.19sec. Also J. Derisley, in the Tortoise Stable Lotus VII with 1,172 c.c. Ford engine, set a class record for sports cars up to 1,400 c.c. unsupercharged at 22.85sec. Not much slower was the previous class record holder, R. Wickson, with his somewhat staid looking Buckler 90. This was the only record set during the meeting.

During one climb there was an alarm when M. G. Manning's Smith 500 emitted clouds of smoke just after getting up speed for the first corner. Fortunately no fire developed, and more leisurely sampling of the fumes after Manning had pulled off suggested nothing more serious than overheated clutch lining.

In the class for racing cars of up to 1,100 c.c., D. R. Good (1,098 Cooper-J.A.P.) was the sole starter. On his first climb he got into trouble near the top, but was able to set up the very good time of 23sec on his second run, declining to take up the offer made to all competitors of a third attempt. This one-armed driver put up a most impressive display. No other incidents of note marred the day.

On the other hand, a number of performances which were exceptionally good in the conditions prevailing enlivened the programme. Patsy Burt's third place in the class for racing cars of up to two litres was creditable. The first run was "slow" in the wet and the second marred by a bad start. Her third run, however, was a cracker at 23.38sec, beaten only by J. Berry's fine 22.63 in the 1,960 c.c. supercharged E.R.A. Special and D. A. Haig's 23.22 in his blown Cooper.

W. A. Taylor was another sole entry, his stark Caesar Special being alone in the open racing car class. Like Good earlier, lack of competition did not result in lack of effort. His 24sec was the work of a courageous man, for the car was rarely pointing and travelling in the same direction at any one time.

F. Copeman won third place in the 1,100 c.c. sports car class in his 3-cylinder, two-stroke D.K.W. saloon, beating opposition which included a Lotus-Climax; J. Derisley drove brilliantly to set up the class record mentioned, yet one could not help but feel sympathy for Wickson, the displaced record holder, who made such a splendid trio of attempts in the relatively old Buckler.

Perhaps the most memorable show of all was provided by R. W. Ashley in his vintage, chain-driven, 1½-litre Frazer Nash in the 2-litre sports car class. He took top honours with the remarkable time of 24.40sec, less than three seconds outside the class record standing to the Cooper-Climax of T. E. B. Sopwith. The day was made all the more enjoyable by the adroit organization.

PROVISIONAL RESULTS

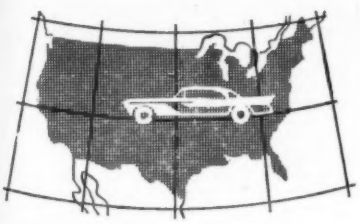
Sports cars: Up to 1,100 c.c. unsupercharged: 1, Lotus 1,097 (T. G. Tallis), 24.34sec; 2, Lotus 1,097 (R. N. Robinson), 24.86sec; 3, D.K.W. 896 (F. Copeman), 25.38sec. **1,101 to 1,400 c.c. unsupercharged and up to 1,100 c.c. supercharged:** 1, Lotus 1,172 (J. Derisley), 22.85sec (record); 2, Lotus 1,172 (P. Belston), 23.68sec; 3, Buckler 1,172 (R. Wickson), 23.69sec. **1,401 to 2,000 c.c. unsupercharged and up to 1,400 c.c. supercharged:** 1, Frazer-Nash 1,496 (R. W. Ashley), 24.40sec; 2, Lotus-B.M.W. 1,971 (W. S. Perkins), 24.59sec; 3, Ace-Bristol 1,971 (J. Anstice), 24.66sec. **Over 2,001 c.c. unsupercharged and over 1,401 c.c. supercharged:** 1, Tojeiro 2,922 (A. M. Park) and Chapman Mercury 4,240 (J. P. Chapman), 23.93sec; 2, Austin-Healey 2,690 (J. Gardner), 24.67sec.

Racing cars: Up to 500 c.c.: 1, Cooper 499 R. B. James), 22.19sec; 2, Cooper 499 (E. G. Willmott), 23.39sec; 3, Grenfell 498 (M. R. Lovell), 23.93sec. **501 to 1,100 c.c.:** 1, Cooper 1,098 (D. R. Good), 23.00sec. **1,101 to 2,000 c.c.:** 1, E.R.A. Special 1,960 s (J. Berry), 22.63sec; 2, Cooper 1,132 s (D. A. Haig), 23.22 sec; 3, Cooper 1,460 (Miss P. Burt), 23.38sec. **Over 2,000 c.c.:** 1, Cæsar Special 2,030 (W. A. Taylor), 24.0sec.

Fastest time of the day: Cooper 499 (R. B. James), 22.19sec.

Poor U.S. Trading Reports

CHRYSLER and American Ford have both reported a trading loss in the second quarter of this year in spite of sales recoveries in June. Chrysler lost £3,600,000, bringing the total loss so far this year to £8,900,000. Ford lost £6,180,000, but its more satisfactory first quarter balanced the books, leaving a profit for the half-year of £1,920,000. General Motors has not yet published its accounts, but is expected to have fared better than the others of the Big Three.



Detroit notebook

SAVING COSTS—AND BUILDING BETTER : STIFFNESS OF UNIT-CONSTRUCTION BODIES

Roger Huntington, A.S.A.E.

DETROIT production men continue to beat their brains out trying to reduce costs in every imaginable way. (The problem is becoming more and more critical, what with the recession's downward squeeze on prices and labour's upward squeeze on costs.) One example of this hard new thinking is that body engineers are taking another long look at circulating air heaters for the interior. For about ten years almost all of our cars have used fresh-air heaters, where fresh, cold air is taken in through ducts from the grille, heated in a large radiator core, and distributed to the passenger compartment in considerable volume and at considerable velocity. It gives a terrific heating system in even the coldest weather—and has the added advantage of little or no mist on the windows.

Now some of the companies are experimenting with improved circulating heaters (where the air in the compartment is continuously heated and circulated, with little addition of fresh air). The obvious savings would be in the air ducting and in radiator core size. There are a dozen angles; in fact, we've still got one ace we can play to reduce costs on the fresh-air system. That is, present systems control interior temperature by varying the flow of hot water through the heater radiator core. I understand some of these thermostatic water valves cost the factories over $5.00 each. The new idea is to use constant water flow, but regulate the amount of air going through the core with a cheaper air throttle.

And the wonderful thing about Detroit is that they can save costs and build better cars, too!

* * *

A CLASSIC argument used in favour of the "unit," or integral, body is that it has considerably more torsional stiffness than a conventional frame-body combination. This used to be true, but how about more modern unit bodies, with thin roof lines and "dog leg" front struts for wraparound windshields?

At this point it seems that the unit bodies still hold a substantial edge in torsional stiffness, at least in the shorter wheelbase lengths. A good average figure for torsional stiffness of a modern frame-body on a wheelbase of 120in or so would be between 4,000 and 5,000 lb-ft torque per degree of twist (measured over wheelbase length). In comparison, the late Rambler unit body, on a 108in wheelbase, has a stiffness rating of 6,800 lb-ft-deg.

Recently released data on the new Thunderbird gives a comparison between the new unit body on the 113in wheelbase and the '55-'57 frame model on a 102in base. Those figures were 8,150 and 5,200 lb-ft-deg respectively. Stiffness figures on the '58 Lincoln unit body on 126-in base are not available, but would probably show well above the 5,000lb-ft figure.

It is known, however, that considerable steel had to be added to the original design to get acceptable stiffness—which increased the weight considerably.

The important point here is that the torsional stiffness of the conventional frame-body combination is trending down slightly, because of the flimsy frame layouts necessary to reduce body weight. If unit bodies can hold their edge in stiffness it would remove a major objection to this type of construction when used with modern styling motifs.

Your QUESTIONS Answered

READERS who wish to submit questions are requested to enclose a stamped, addressed envelope and address their letters to *The Autocar*, Dorset House, Stamford Street, London, S.E.1, marking the envelope "Readers' Service" in top left corner. **Queries should not be submitted which are the normal business of manufacturers' service departments.**

Bigger Battery

Are there any disadvantages in fitting a higher capacity battery than the one normally fitted?
Northampton. *A. A. A.*

THERE ARE no ill effects—the larger battery can take longer and greater advantage of a period of running where the dynamo puts out charge, because it has more storage capacity.

It is able also to provide sustained output for such demands as, say, a difficult start, where the self-starter is called on to do much more work than usual.

Heater Installation

A friend has offered to give me a 6-volt heater for my 1946 Austin 12 which has a 12-volt electrical system. What is the best method of wiring so as to do no harm to the battery? Would a resistance be the best solution?
Derby. *K. B.*

YOU MAY USE a resistance in series with the heater fan motor to operate quite satisfactorily on 12 volts if it is a fixed speed motor; the resistance should be equal to that of the heater motor and capable of carrying 2½ amp. A good electrician should be able to supply such a resistance quite cheaply, though he will need to have the motor to determine its resistance, so that he may match it.

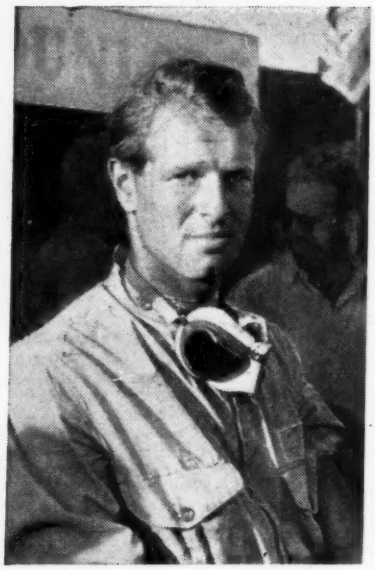
If the heater has a rheostat by which the speed of the motor may be varied, it is more difficult, since the resistance of the motor and rheostat naturally varies substantially according to setting, and it is extremely difficult to vary a matching resistance in proportion, to cut down the voltage. You could omit the rheostat and use a simple on-off switch with series resistance, or you might be able to get a replacement 12-volt motor from the makers of the heater. We cannot recommend the use of a 6-volt tapping from the battery; the series resistance is a better arrangement, and it involves no threat to the battery.

Starting Handles

Starting handles for long have been emergency features, but unless really grotesque (as some still are), how invaluable in emergencies they can prove! But without them how are we to check, with convenience and accuracy, valve timing, compression, contact-gaps, cam clearances, ignition advance, and so forth? The fan-belt will not pull big engines round, and while some do offer revolving parts that could be spannered round they are almost impossible to get at. What is the answer? I shall be interested to learn if anyone has yet discovered a convenient substitute for this simple and elementary device.
Norwich. *J. C. R. M*

A NUMBER OF modern cars in various price categories are no longer provided with starting handles or even the means to insert one, or the dog to engage, and although it might have been expected that this would cause inconvenience to owners, so far there has been very little indication of its doing so.

All the checks listed above, with one exception, can be made if the plugs are removed and the engine turned with the aid of the fan-belt; the exception is the check on compression ratio. Should a pressure check be necessary the feel of the handle is of little value; the only satisfactory way is to take actual readings with a pressure gauge inserted in the plug hole. Such gauges register a maximum pressure figure and, incidentally, the test must be made with the throttle fully open or the readings will be misleading



Peter John Collins

NONE had so great a heart for the fight, or was so ready to go to the limit of personal safety as Peter Collins. His end epitomized these traits; another driver had taken the lead, and so long as his car held together, he was going to push his challenge to the utmost. Yet nobody at the Ring, while the battle was on, would ever have thought, with the three drivers involved, that such glorious motor racing could have ended this way; they were three of the most experienced and safest drivers in the game. That Peter should have crashed fatally is, even now, almost unbelievable.

There was never any doubt. Peter was in motor racing for the love of it. The sport was not his profession; money, though it eventually came in plenty, was not the driving force behind his success. He loved sailing, too, and boats; he was a typically cheerful, happy outdoor person, and motor racing, like all his other activities, was fun. When the party was over, his father's business at Kidderminster was waiting.

Starting with formula 3, like so many other great British drivers, Peter graduated to John Heath's H.W.M.s in 1952—where Stirling Moss and Lance Macklin, too, served an apprenticeship. Also driving in the Aston Martin team during the same year, he won the Goodwood Nine-hour race, co-driving with Pat Griffith. The years 1953 and 1954 were spent driving a variety of cars—Aston Martin, Thinwall Special, Vanwall, Maserati, B.R.M., and, once in 1955, Mercedes-Benz. In one of these—a sports car—he won the Targa Florio with Stirling Moss, who saw in Peter the signs of a really great driver. During these years he scored many other successes, including the 1953 Tourist Trophy which he won with Pat Griffith.

It was in 1956 that Enzo Ferrari, always on the look-out for drivers for Scuderia Ferrari, asked Peter to join the team. During that first year as a Ferrari driver he won the French and Belgian G.P.s, and shared the wheel of the winning cars in the Monte Carlo, British and Italian G.P.s; by the end of the year he was in second place to J. M. Fangio in the Drivers' Championship. Ferrari's decision was indeed paying dividends.

But for an extraordinarily sporting action by Peter during the Italian (European) Grand Prix at Monza that year, he might even have won the Championship. I quote from the account of the race in *The Autocar* of 7 September, 1956. "At the end of the 34th lap there occurred one of the most stirring things in this most exciting of races. Peter Collins, lying in third place, came into the pits for a tyre inspection, and voluntarily handed his Ferrari to Fangio—thereby giving up any possible chance he might have had of winning the World Championship. It was a truly generous action, and one which gives the lie to cut-throat tactics which one or two people have alleged against motor racing."

It was typical of Peter. Fangio, in the 16 laps that were left, took the car through to second place, and in the weeks that followed Peter's generous action was praised by everyone.

Last year he was again asked to join Scuderia Ferrari, and some feel that his most remarkable drive of the year was in the Mille Miglia. In atrocious weather conditions, he averaged 118.5 m.p.h. to Verona, well in the lead of his class; by Forli he was leading the race, too. On the long, fast straights by the Adriatic, he made up time until, at Reiti, he was four minutes ahead of Taruffi, also in a Ferrari. The dominant Ferraris maintained their line-astern formation across the Abruzzi mountains to Rome, Collins still increasing his lead and averaging over 107.8 m.p.h. Over the Futa and Raticosa passes he weaved his meteoric way towards his scheduled fuel stop at Bologna. However, the news suddenly came through to the waiting crowds back in Brescia that the Ferrari had stopped at Parma; the transmission had failed only 70 miles from the finish. It had been a fabulous drive, and typical of Peter.

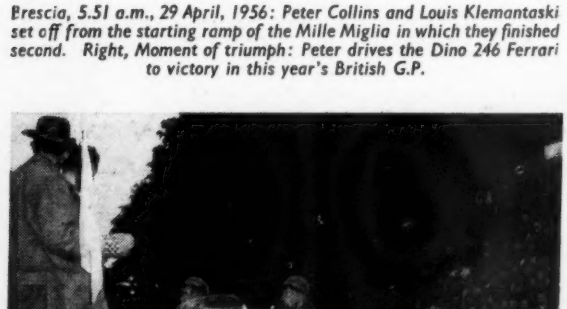
Then 1958, again with the Ferrari. He won the Buenos Aires 1,000 km race, with Phil Hill; then the Sebring 12-hour race, again with Hill. He won the formula 1 *Daily Express* Trophy Race at Silverstone in one of the new Dino 246 Ferraris; and, back again with a sports car, he was fourth in the Targa Florio, again with Phil Hill . . . third in the Monaco G.P., second in the Nurburgring 1,000 km race, driving with Mike Hawthorn . . . first in the British Grand Prix at Silverstone, and fifth in the French G.P. at Rheims.

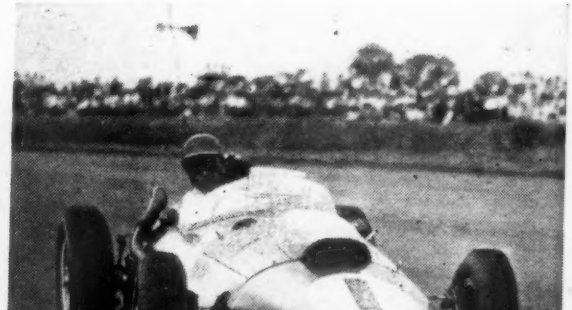
It was a great year, despite suggestions that his marriage to charming Louise Cordier last year had lessened his interest in motor racing. Deeply attached to each other, it was a joy to meet Peter and Louise together. They were immensely happy; perhaps they were making plans for a future that did not include motor racing. It would have been understandable.

It is very, very difficult to contemplate future seasons without him; his name is so irrevocably tied up with the post-war racing scene.

P. G.

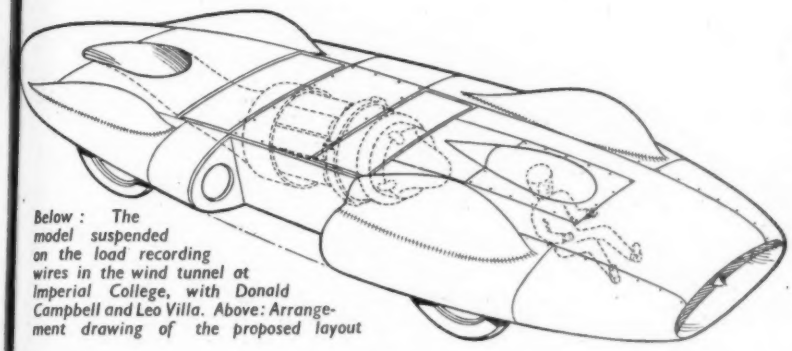
Brescia, 5.51 a.m., 29 April, 1956: Peter Collins and Louis Klemantaski set off from the starting ramp of the Mille Miglia in which they finished second. Right, Moment of triumph: Peter drives the Dino 246 Ferrari to victory in this year's British G.P.





. . . In His Father's Footsteps

DONALD CAMPBELL'S PLANS FOR HIS BLUEBIRD RECORD CAR



Below: The model suspended on the load recording wires in the wind tunnel at Imperial College, with Donald Campbell and Leo Villa. Above: Arrangement drawing of the proposed layout

IF present plans are successful, Donald Campbell, C.B.E., who already holds the world water speed record at 239.07 m.p.h., will be the first man to achieve a mean speed in excess of 400 m.p.h. over the measured mile on land. His father, Sir Malcolm Campbell, was the first to travel at over 300 m.p.h. when he raised the record to 301.13 m.p.h. in 1935; he also held the world's water speed record at 141.74 m.p.h. in 1939. The present record already stands to the credit of Great Britain, the late John Cobb achieving a mean speed of 394.2 m.p.h. over the Utah Salt Flats with the Napier-Railton (powered by two Napier Lion engines) in 1947. It is laid down in the regulations that a run in each direction must be made and the maximum time interval between them is one hour. In one of his runs Cobb exceeded 400 m.p.h. but could not achieve this target as a mean speed.

Designs for the new car are already in hand, and should be completed by early 1959. It is expected that the finished car will be ready for trials by July-August, 1960, and if these are successful the record attempt will be made towards the end of that year.

Responsible for the main design are L. H. and K. W. Norris, two of five brothers who run the design consultant business of Norris Brothers, Ltd., Burgess Hill, Sussex. Co-operating with them is the aeronautics department of the Imperial College, headed by Professor Squire, Professor of Aeronautics at London University. Reid Railton, who was responsible for the design of the Napier-Railton car, has also been consulted on some design problems. To look after the construction side Donald Campbell will have Leo Villa, who was mechanic to his father also.

Last week it was possible to witness some of the wind-tunnel tests on the final model which has been evolved. The object of these tests is to simulate all the problems of stability at the projected speed of 475 m.p.h. Three models were built before the final form, as illustrated in the drawing, was adopted.

Two main problems are involved in such an undertaking, and the wind-tunnel model tests were used to overcome them. If there is too much lift from the streamlined form the car is unstable, and if the downward pressure is too great the tyres are overloaded. For Bluebird, the wind tunnel tests recorded zero lift at all speeds, and a small downward pressure at the maximum occurring midway between the axles.

Without tail fins the proposed design is not completely stable in yaw; fins have been evolved to satisfy this requirement but it has not yet been decided if they will be fitted, as they exert appreciable drag. Braking is a very formidable problem at these very high speeds, and barn-door type air brakes on each side have been designed after full wind-tunnel investigations of their effect on stability.

It has also been necessary to carry out air flow tests on the inside of the car, for the Bristol Proteus gas turbine engine by which it is powered is claimed to develop the equivalent of 5,000 b.h.p., and consumes very large quantities of air.

The engine, a free-turbine type, is being modified to drive both front and rear axles; each will be a solid drive without the use of a free-wheel between them, but it may be necessary to consider the use of a limited slip type of differential. Dunlop have already carried out research on tyre requirements for the four wheels; the outside diameter of each tyre will be 52in—8in more than those on Cobb's car.

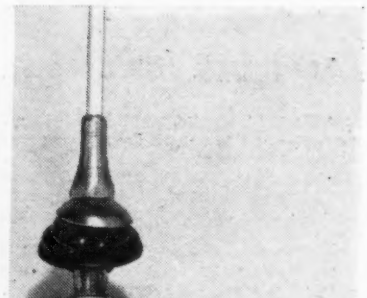
Estimated weight of the car is 9,000 lb (2,000 lb more than Cobb's); there will be a frame and undershield of aluminium sections and plates, with a lift-off body shell; the driver will be seated in the nose with a normal steering wheel, although the front wheels will have only a few degrees of lock each way. Two types of exhaust layout are projected; in one there is a single exit in the top of the tail and in the other it is split between the top and the underside. The most suitable will be selected after the initial trials.

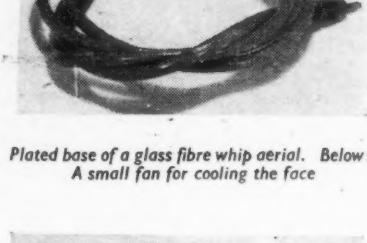
LEADING DIMENSIONS

Track 5ft 6in, wheelbase 13ft 6in, overall length 30ft 4in, overall width 8ft, overall height 4ft 8in, all-up weight 9,000lb, engine power 5,000 b.h.p. at 11,000 r.p.m.

The brothers Norris hold the latest model of the Bluebird hydroplane as it will be modified for this year's record attempt on Lake Coniston; Donald Campbell is between them, Leo Villa on the right. Two early models of the car, one with stabilizing fins, are seen on the table

Accessories





Plated base of a glass fibre whip aerial. Below: A small fan for cooling the face

Glass Fibre Car Aerial

A DIFFICULTY of the whip-type car aerial, when made of metal, is that it may be so bent by striking an obstruction, as when entering a garage, that it takes a permanent set and cannot be telescoped away again. This is overcome in a new product of S. Smith and Son (Radiomobile), Ltd., Goodwood Works, North Circular Road, London, N.W.2, in which the non-telescopic aerial tube is of resin-bonded glass fibre, which conceals and protects the highly efficient braided copper conductor.

A 3ft 6in example of this aerial withstood gross misuse, including repeated bending to half its length, without losing its springiness, straightness or good surface finish. Type-named model AW.700, it has a chromium-on-brass universal base mounting, with single-hole fitting. The aerial mast tapers from a quarter to an eighth of an inch in diameter; it is finished in cream, but could be painted to match the colour of a car, though the finish would probably not be so durable as the epoxy-resin finish used by the makers. The unit, complete with co-axial cable lead, costs £1 18s 6d; the easily replaceable mast section 15s 9d.

Corgi Toys

A NEW miniature car model, the Lotus Eleven Le Mans, is introduced by Playcraft Toys, Ltd., Finsbury Pavement House, 120, Moorgate, London, E.C.2. It is neatly cast, and costs 3s 6d. The car is painted in turquoise.

Consul-Zephyr Mark I Styling

STYLING additions for Mark I Ford Consul, Zephyr and Zodiac cars (not the current models) are introduced by D. F. Lott and Co., Ltd., 161-163, Globe Road, London, E.2. There are rear fins, and raised head lamp hoods. They are of steel, phosphated before being painted with primer coat, ready for the buyer to have matching body colours applied, but black-painted ones can be supplied finished. Bright metal work is stainless steel. Printed instructions and fitting kits go with each item, including grommets, plastic beading, and so on.

Rear fins cost £9 14s in primer, £11 6s in black. Head lamp hood tunnels are £8 19s in primer, £10 4s 6d in black. Other devices are bright side-lamp trims (£2 5s 6d); stainless steel downward-sloping front-side flashes (13s 6d); and rear-side flashes (16s 3d).

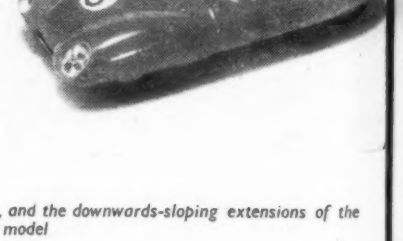
Complete sets of everything cost £21 12s in primer paint and brightwork, £24 6s in black finish.

Cool Faces

ONLY 3¾in high without its propeller, a small 6- or 12-volt fan is intended for personal cooling in hot weather motoring. Its body is of a strong ivory and grey plastic, and the fan blades are of flexible plastic. It cannot hurt a finger, and presents no danger. Attachment is by rubber sucker.

It runs quietly, has a negligible current consumption, and creates a surprisingly good airflow. Such devices are popular in hot countries. The reviewer, carrying and using a fan in Japan, was interested to note, that if the face is cooled, the whole person feels cool, though it is hard to think why.

The importers are John Somers, Ltd., 142-148, Edgware Road, London, W.2.



Styling additions for Mark I Ford Consul-Zephyr models. Minor items are the side lamp surrounds, and the downwards-sloping extensions of the standard waist strip. Above: Lotus Le Mans—a new Corgi model

Brands Hatch Bank Holiday

BUEB SETS SPORTS CAR LAP RECORD

IDEAL motor-racing weather, moderate temperature, a gentle breeze and an overcast but continent sky attended the B.R.S.C.C. August Bank Holiday meeting at Brands Hatch. A varied programme run precisely to schedule, and the unparalleled view enjoyed by the spectator at Brands, contributed to an excellent day's sport.

Highlights were a new lap record for sports cars over 1,900 c.c. capacity by Ivor Bueb, driving a works Lister-Jaguar; laps by three different drivers in the "magic minute," and closely fought battles in several events. Outstanding was the performance of E. H. Broadley's quiet, rock-steady, 1,098 c.c. Climax-engined Lola.

First event (qualifying for the *Autosport* series production sports car championship) was a Frazer-Nash benefit (first, second, third, fifth); the interloper was P. R. Crabb's Austin-Healey 100S.

The World Sports Trophy for formula 3 cars was run in two heats of ten laps with a 10-lap final. The first heat was won by Jim Russell in R. R. Jackson's Cooper-Norton, Tom Bridger and Stuart Lewis-Evans being second and third. Winner of the second heat was J. R. Lewis (Cooper-Norton), with P. D. Michell second in a similar car. Third place was closely contested by the Comet-Norton of B. A. Heyward and J. Menzies' Petty-Norton, Heyward finishing ahead of Menzies by a mere 1.6sec. In the final Jim Russell retired after recording fastest lap at 74.4 m.p.h. The race eventually went to Stuart Lewis-Evans in his Beart-prepared Cooper at 71.31 m.p.h., with Lewis and G. M. Jones second and third respectively in Cooper-Nortons. Among the four other drivers who retired in the final was T. Bridger.

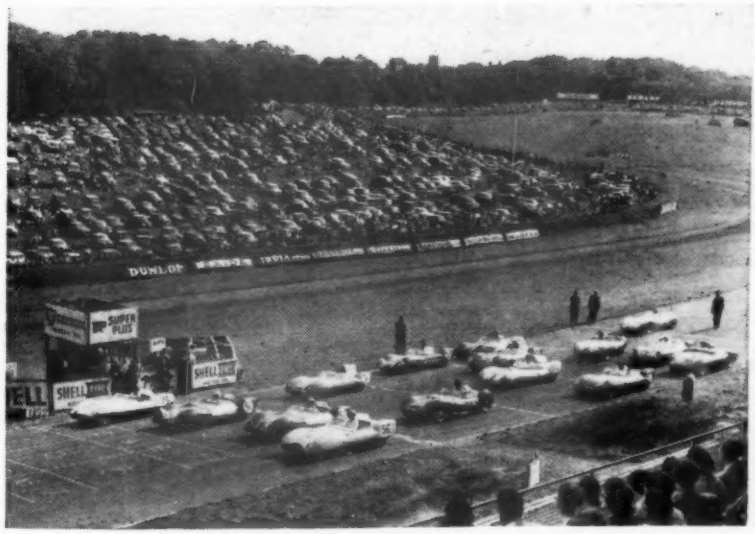
The Rochester Trophy for sports cars up to 1,100 c.c. was likewise run in two 10-lap heats, but with a 15-lap final. In the first heat, works cars included the Lotuses of P. Ashdown and A. Stacey, and R. Mackenzie-Low's Elva; all cars in the entire race had engines of 1,098 c.c. by the same manufacturer. Stacey's Lotus gained an immediate lead, which steadily increased until at the finish he was about half a lap ahead of the field. His speed—72.7 m.p.h.—did not endanger his own class record of 74.4 m.p.h.

Broadley in the Lola dominated the second heat and equalled Stacey's aforementioned record. The outright performance of this car was matched by an almost uncanny steadiness on the corners.

Early in the final, however, the Lola was seen to spin off at the bottom of Druids Hill, the car rejoining the race but being black-flagged on the second lap, as was J. Brown's Elva. The Rochester Trophy went to Stacey, whose works Lotus-Climax proved yet another exponent of the one-minute lap.

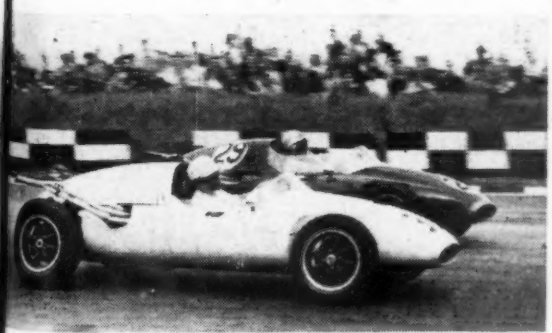
Halfway through the meeting, a flash-back occurred, and we were apparently gazing at a road circuit shortly before the outbreak of the first world war, apart from production prototypes perhaps—a 1915 Model T Ford Sedan driven by Alan Brown, and Mrs. Lewis-Evan's elegant little Wolseley coupé. In due course, the complex handicapping system was resolved and away went the first man, "Pop" Lewis-Evans in his touring 1911 Rolls-Royce (three Lewis-Evans took part in this Veteran, Vintage and Edwardian Handicap, the 1906 Darracq being driven by Trevor: with Stuart's appearance in other events, surely this is a record for any motoring family?). There followed a dignified gaggle of increasing modernity, until limit man Jack Sears got away in the T.T.-winning 1914 Sunbeam, just after the Lewis-Evans Rolls wafted past to start its second lap. The Sunbeam and Hutton Racers tore through the field in a vain attempt to catch the winning Prince Henry Vauxhall of Lord Montagu. Sears was second, however, having made the fastest lap at 60.65 m.p.h. Third was John Bolster's 1911 Rolls-Royce touring car.

The Kent Trophy for formula 2 racing cars (a qualifying event for *The Autocar* formula 2 Championship) was run in two parts, the winner being the competitor with the fastest aggregate time. The first race was notable for the fact that four cars equalled the current lap record for the class: the Coopers of Brabham and Lewis-Evans which finished first and



Some idea of the crowds at this meeting is given by this view of the start of the B.R.S.C.C. 1,500 c.c. Championship, won by Bristow's Hume-Lotus (on the far side of the second row of the grid)

Left: Duel during the Kent Trophy: the Coopers of Stuart Lewis-Evans and Jack Brabham fighting it out, as they did throughout the event. Right: The winner of the Kingsdown Trophy, Ivor Bueb. He broke the lap record for sports cars of over 1,900 c.c. in this race, at a speed of 73.91 m.p.h.



Brands Hatch . . .

second respectively with 0.6 sec between them, Cliff Allison's works Lotus, and Denis Taylor's privately entered car of the same make.

Brabham and Lewis-Evans again took first and second place in the second part, third man being B. McLaren in the works Cooper. The struggle for first place was intense throughout the race; Lewis-Evans tended to close on Brabham on corners, but the latter's clearly superior acceleration told in the straights. At the finish, Lewis-Evans' car was seen to be shedding oil and barely reached the paddock.

The lap record for unsupercharged sports cars over 1,900 c.c. fell to Ivor Bueb in a 3.8-litre works-entered Lister-Jaguar during the Kingsdown Trophy race, which he ultimately won. The other works Lister-Jaguar (R. Jensen) was second, and third was the older 3.4-litre Lister-Jaguar driven by Bruce Halford.

No records fell in the B.R.S.C.C. National 1,500 c.c. Championship, but C. Bristow's Hume-Lotus won at 71.8 m.p.h., after Graham Hill spun off on the 10th lap and lost first place. The Lola, starting from the back of the grid, worked its way through the field to finish fourth; second and third were the two works Lotuses of Ashdown and Stacey.

Staple fare in production saloon car races is the sight of a brace or more of 3.4 Jaguars in the lead, cornering, as commentator Bolster put it, on the door-handles. The last event of this meeting was no exception, the race being won by the Jaguar of Tommy Sopwith, with Sir G. Baillie 0.4 sec behind him. The winner's speed was 62.5 m.p.h. John Sprinzel's A.35—starting from the second row of the grid—was a worthy winner of the up-to-1,200 c.c. class at 58.2 m.p.h.

PROVISIONAL RESULTS
(Lap distance 1.24 miles)

Series Production Sports Car Race (21 laps): 1, Frazer Nash 1971 (J. R. Stoop), 23min 31.6sec, 66.41 m.p.h.; 2, Frazer Nash 1971 (M. Bond); 3, Frazer Nash 1971 (J. Dashwood). **Fastest lap:** J. R. Stoop, 1min 5.8sec, 67.84 m.p.h.

World Sports Trophy, formula 3 (2 10-lap heats) (heat 1): 1, Cooper Norton 499 (J. Russell), 10min 18.2sec, 72.21 m.p.h.; 2, Cooper Norton 499 (T. Bridger); 3, Beart Cooper 499 (S. Lewis-Evans). **Fastest lap:** J. Russell, 1min 0.4sec, 73.91 m.p.h. **Heat 2:** 1, Cooper Norton 499 (J. R. Lewis), 10min 49.8sec, 69.32 m.p.h.; 2, Cooper Norton 499 (P. D. Michell); 3, Comet Norton 499 (B. A. Heyward). **Fastest lap:** J. R. Lewis, 1min 3.8sec, 69.97 m.p.h. **Final (10 laps):** 1, S. Lewis-Evans, 10min 26sec, 71.31 m.p.h.; 2, J. R. Lewis; 3, Cooper Norton 499 (G. M. Jones). **Fastest lap:** S. Lewis-Evans, 1min 74.4 m.p.h.

Rochester Trophy for sports cars under 1,100 c.c. unsupercharged (2 10-lap heats) (heat 1): 1, Lotus Climax 1,098 (A. Stacey), 10min 31.2sec, 70.72 m.p.h.; 2, Lotus Climax 1,098 (M. Taylor); 3, Lotus Climax 1,098 (K. A. Greene). **Fastest lap:** A. Stacey, 1min 1.4sec, 72.70 m.p.h. **Heat 2:** 1, Lola Climax 1,098 (E. H. Broadley), 10min 14.2sec, 72.68 m.p.h.; 2, Elva 1,098 (J. Brown); 3, Lotus Climax 1,098 (D. J. T. Randall). **Fastest lap:** E. H. Broadley, 1min, 74.4 m.p.h. **Final (15 laps):** 1, A. Stacey, 15min 18.4sec, 72.91 m.p.h.; 2, M. Taylor; 3, Lotus Climax 1,098 (P. Ashdown). **Fastest lap:** A. Stacey, 1min, 74.4 m.p.h.

Veteran, Vintage and Edwardian Handicap: 1, 1914 Vauxhall Lord Montagu), 7min 12.2sec, 49.57 m.p.h.; 2, 1914 Sunbeam (J. G. Sears), 7min 27.4sec; 3, 1911 Rolls-Royce (J. V. Bolster), 7min 27.4sec. **Fastest lap:** J. G. Sears, 1min 13.6sec, 60.65 m.p.h.

Kent Trophy formula 2 (qualifying for The Autocar Championship) (2 parts of 21 laps) (part 1): 1, Cooper Climax 1,475 (J. Brabham), 20min 45.2sec, 75.28 m.p.h.; 2, Cooper Climax 1,475 (S. Lewis-Evans); 3, Cooper Climax 1,475 (J. Russell). **Fastest lap (tie):** J. Brabham, S. Lewis-Evans, Lotus 1,475 (C. Allison), Lotus 1,475 (D. Taylor), 58.2sec, 76.70 m.p.h. **Part 2:** 1, J. Brabham, 20min 43.6sec, 75.42 m.p.h.; 2, S. Lewis-Evans; 3, Cooper Climax 1,475 (B. McLaren). **Fastest lap:** J. Brabham, 58.4sec, 76.44 m.p.h. **Aggregate result:** 1. J. Brabham; 2, S. Lewis-Evans; 3, B. McLaren.

Kingsdown Trophy, sports cars over 2,500 c.c. (15 laps): 1, Lister Jaguar 3.781 (I. Bueb), 15min 22.4sec, 72.59 m.p.h.; 2, Lister Jaguar 3.781 (R. Jensen); 3, Lister Jaguar 3.781 (B. Halford). **Fastest lap:** I. Bueb, 1min 0.4sec, 73.91 m.p.h.

B.R.S.C.C. National 1,500 c.c. Championship (15 laps): 1, Hume Lotus 1,460 (C. Bristow), 15min 32.6sec, 71.8 m.p.h.; 2, Lotus Climax 1,098 (P. Ashdown); 3, Lotus Climax 1,098 (A. Stacey). **Fastest lap:** Lola 1,098 (E. H. Broadley), 1min 0.2sec, 74.15 m.p.h.

Saloon Car Race (10 laps): Over 2,701 c.c.: 1, Jaguar 3.4 (T. E. B. Sopwith), 11min 54.2sec, 62.5 m.p.h.; 2, Jaguar 3.4 (Sir G. Baillie). **Fastest lap:** T. E. B. Sopwith, 1min 9sec, 64.7 m.p.h. **1,601 to 2,700 c.c.:** 1, Austin A.105 (J. G. Sears), 12min 16.4sec; 2, Ford Zephyr (J. M. Uren); 3, Ford Zephyr (D. B. Haynes). **Fastest lap:** J. G. Sears, 1min 12.6sec, 61.49 m.p.h. **1,201 to 1,600 c.c.:** 1, M.G. Magnette (A. T. Foster), 12min 30sec, 59.52 m.p.h.; 2, Riley 1.5 (R. North); 3, Hillman Minx M. B. Everley). **Fastest lap:** A. T. Foster, 1min 13.2sec, 60.98 m.p.h. **Up to 1,200 c.c.:** 1, Austin A.35 (J. Sprinzel), 12min 47sec, 58.20 m.p.h.; 2, Austin A.35 (G. C. Shepherd); 3, Austin A.35 (J. E. Wheeler). **Fastest lap:** J. Sprinzel, 1min 15.2sec, 59.36 m.p.h.

Mallory Park

TAKING advantage of the comparatively short length of the circuit at Mallory Park (1.4 miles) the Nottingham S.C.C. ventured into a programme of 20- and 30-lap races last Monday; interest kept well up through each race, and several were quite exciting.

In the first event, for the *Autosport* sports car championship, D. Protheroe's well-known Austin-Healey 100S led throughout, and J. Lawry's Lotus Elite, running in the class for cars up to 1,300 c.c., was a creditable second, successfully holding off the opposition of C. R. Hanson's Austin-Healey. On lap 14 Hanson came out of the Devil's Elbow bend just ahead of the Elite, but the Austin-Healey spun in a cloud of rubber smoke, narrowly missing the bank. It recovered and continued in third place.

The entry for the 1,500 c.c. sports car race consisted almost exclusively of 1,098 c.c. Lotus-Climax cars; first two places were quickly taken and held by T. Dickson and I. Ireland. Third for a while was C. G. Escott, leading a highly competitive threesome, but at halfway J. Blumer moved up from fifth to third.

In the following event, for sports cars over 1,500 c.c., J. Clarke (Jaguar D-type) led from the first lap, followed by Mould (Cooper-Jaguar), J. Higham (Lotus-Climax) and Protheroe (again in the Austin-Healey). On the sixth lap Higham took second place, then Protheroe also passed Mould. For five laps the order was unchanged, and then Higham lost control of the Lotus at the Lake Esses and Protheroe, close behind, hit the spinning car. Both drivers were unhurt, but the cars finished in the ditch extensively damaged. Mould continued in second place again, and P. J. Sargent (Jaguar) was third.

With its many corners in quick succession, Mallory is a tricky circuit, presenting few opportunities for closely matched drivers to overtake, with the result that places often change suddenly even after many processional laps have suggested that the result is a foregone conclusion This was illustrated in the second *formule libre* heat, when Clarke (Jaguar) led for two laps and then, after a setback, was third and later second, but never quite able to regain the lead from P. J. Arundell (Lotus-Climax). Again, in the *formule libre* final there were frequent changes among the leaders until the placings settled down, with H. Taylor (Cooper-Climax) first, A. E. W. Marsh (Cooper-Climax) second, and F. R. Gerard (Cooper-Bristol) third.

Some excitement was caused in the first *formule libre* heat when P. Emery's 2.4-litre Jaguar-Emeryson ran for nearly a lap with oil pouring from a loose joint in the pipe to the cooler. At once the track became treacherous, and A. Brooke's Lotus-Climax—among those that skidded wildly on the oil—ricocheted off the marker barrier.

RESULTS (lap distance 1.35 miles)

Scratch races: Sports cars up to 1,500 c.c.: Heat 1 (10 laps): 1, Lotus-Climax 1,098 (T. Dickson), 9min 47.6sec, 82.71 m.p.h.; 2, Lotus-Climax 1,098 (I. Ireland); 3, Lotus-Climax 1,097 (J. Blumer). **Fastest lap:** Lotus-Climax 1,098 (T. Dickson), 57sec, 85.26 m.p.h. **Heat 2 (10 laps):** 1, Victoria-Climax 1,097 (J. C. Brierley), 10min 1.4sec, 80.81 m.p.h.; 2, Elva-Climax 1,098 (B. J. Cox); 3, Arden-Climax 1,100 (C. Summers). **Fastest lap:** Victoria-Climax 1,097 (J. C. Brierley), 58sec, 85.79 m.p.h. **Final (30 laps):** 1, Lotus-Climax 1,098 (T. Dickson), 29min 42.8sec, 81.78 m.p.h.; 2, Lotus-Climax 1,098 (I. Ireland); 3, Lotus-Climax 1,097 (J. Blumer). **Fastest lap:** Lotus-Climax 1,098 (T. Dickson), 57.8sec, 84.08 m.p.h. **Sports cars over 1,500 c.c. (20 laps):** 1, Jaguar 3,442 (J. Clarke), 20min 48.6sec, 77.83 m.p.h.; 2, Cooper-Jaguar 3,442 (P. Mould); 3, Jaguar 3,442 (P. J. Sargent). **Fastest lap:** Jaguar 3,442 (J. Clarke), 1min 0.4sec, 80.95 m.p.h.

Formule libre: **Heat 1 (10 laps):** 1, Fry-Climax 1,475 (M. Parkes), 9min 35.4sec, 83.02 m.p.h.; 2, Cooper-Bristol 2,244 (F. R. Gerard); 3, Cooper-Climax 1,475 (H. Taylor). **Fastest lap:** Fry-Climax 1.475 (M. Parkes), 56.4sec, 86.17 m.p.h. **Heat 2 (10 laps):** 1, Lotus-Climax 1,098 (P. J. Arundell), 10min 19.4sec, 78.46 m.p.h.; 2, Jaguar 3,442 (J. Clarke); 3, Lotus-Climax 1,098 (C. Summers). **Fastest lap:** Lotus-Climax 1,098 (P. J. Arundell) and Jaguar 3,442 (J. Clarke), 1min 0.2sec, 80.97 m.p.h. **Final (30 laps):** 1, Cooper-Climax 1,475 (H. Taylor), 28min 24.4sec, 85.54 m.p.h.; 2, Cooper-Climax (A. E. W. Marsh); 3, Cooper-Bristol 2,244 (F. R. Gerard). **Fastest lap:** Cooper-Climax 1.475 (H. Taylor), 55sec, 88.36 m.p.h.

Autosport **Production Sports car Championship (20 laps):** (A) up to 1,000 c.c.: 1, Turner 948 (F. R. Gerard), 23min 13.0sec, 69.78 m.p.h.; 2, Turner 948 (A. J. Nurse); 3, Turner 948 (J. P. Baldam). **Fastest lap:** Turner 948 (F. R. Gerard), 1min 8.2sec, 71.26 m.p.h. (B) up to 1,300 c.c.: 1, Lotus Elite 1,220 (J Lawry), 21min 34.8sec. (C) up to 1,600 c.c.: 1, Elva-Courier 1,530 (P. D. Gammon), 22min 49.2sec, 70.99m.p.h.; 2, Elva-Courier 1,500 (J. P. Fergusson); 3, M.G. A 1,489 (J. Hayles). **Fastest lap:** Elva-Courier 1,530 (P. D. Gammon), 1min 5.8sec, 74.68 m.p.h (D) 1,601 to 3,500 c.c.: 1, Austin-Healey 100S 2,660 (D. Protheroe), 21min 6.4sec, 76.75 m.p.h.; 2, Austin-Healey 100S 2,660 (C. R. Hanson); 3, A.C. Aceca-Bristol 1,971 (R. A. Brightman). **Fastest lap:** Austin-Healey 100S 2.660 (D. Protheroe), 1 min 2.4sec, 77.88 m.p.h.

Fastest lap of the day: Cooper-Climax 1,475 (H. Taylor), 55sec, 88.36 m.p.h.

TRENGWAINTON

INTEREST was added to the West Cornwall Motor Club's Bank Holiday event by the presence of Cooper drivers seeking points in the Junior Hill Climb Championship.

In the Sports Cars up to 750 c.c. class which opened the event, V. N. Hood, Austin, recorded 28.91sec, which not only won the class but was considerably faster than Bulpin's Healey Sprite, victor in the up to 1,000 c.c. class.

A mixture of sports, sports racing and trials cars contested the up to 1,300 c.c. class. Here J. G. Tallis, Lotus MkVI, made no mistakes and was fastest with 25.96sec, closely followed by T. S. Banbury's Elva. Ash Cleave, neat as ever, in his Morris took third place in 27.9sec.

Various Triumphs and Morgans, and Miss Griffen's capably handled Porsche, did battle in the up to 2,000 c.c. class but none of them approached T. G. Cunane's time of 26.27sec in the A.C. Ace-Bristol.

Many of the 500 c.c. racing cars suffered vicious tailwag on leaving the right-hand hairpin.

PROVISIONAL RESULTS

Sports cars: Up to 750 c.c.: 1, Austin (V. N. Hood), 28.91sec. **Up to 1,000 c.c.:** 1, Austin-Healey Sprite (A. C. I. Bulpin), 29.93sec; 2, Austin-Ford (A. J. Lock), 30.26sec; 3, Ford Special (R. Longman), 33.40sec. **Up to 1,300 c.c.:** 1, Lotus Mk. VI (J. G. Tallis), 25.96sec; 2, Elva (P. S. Banbury), 27.18sec; 3, Morris (W. A. Cleave), 27.91sec. **Up to 2,000 c.c.:** 1, Ace-Bristol (T. G. Cunane), 26.27sec; 2, Morgan (J. F. Brown), 27.24sec; 3, Dellow (J. T. Skinner), 27.51sec. **Over 2,000 c.c.:** 1, Healey Silverstone (R. M. Powell) 27.48sec; 2, Austin Healey 100 (S. J. Broad), 30.11sec; 3, Allard (B. S. Gordon), 30.58sec.

Racing cars: Up to 1,100 c.c.: 1, Cooper JAP (L. Hatton), 24.22sec; 2, Cooper Mk. 10 (E. G. Willmott), 24.77sec; 3, Cooper JAP (B. Eccles), 25.38sec. **Over 1,100 c.c.:** 1, Fairley (R. Phillips), 23.44sec.

Junior Hill Climb class: 1, Cooper (E. G. Willmott), 24.77sec. **Vintage class:** 1, Bentley (M. H. Morris), 30.61sec. **Ladies' award:** Porsche (Miss E. M. Griffen), 29.16sec. **Fastest time of the day:** Fairley (R. Phillips), 23.44sec.

CANADIAN reader sends this photograph of a popular fishing spot—Blue Lake, on the Princeton—Merritt Highway, about 125 miles from Vancouver, British Columbia. Points of interest to British motorists are the Austin parked in the shade, and the double-white-line marking of the highway

Correspondence

Courtesy Horns?

"Use With Discrimination." I am sure that all motorists would agree with Mr. Herbert Crabb's attractive suggestion (18 July) that vehicles be fitted with a soft-toned "courtesy" horn; apart from the initial disadvantage that vehicles not fitted with one, forced to have recourse to the ordinary loud horn, might be wrongly interpreted as being antagonistic, and that, even if every new car were to be supplied with one fitted, it would be long before they became widespread.

In the meantime it would be pleasing if two brief "toots" on the horn became the accepted acknowledgement of courtesy. This is sometimes done on the continent when a motorist wishes to thank one whom he has just passed for signalling him on and drawing into the side of the road. It would have to be used with discrimination, however; no one wants our roads to become a babel of horns, courtesy or otherwise.

Cambridge. EWAN A. Q. DAVIDSON.

Lucky Find

"Almost Perfect"—After 22 Years. Quite recently I was lucky enough to buy a 1936 Austin 10 h.p. Lichfield saloon in almost perfect order; it had been stored all through the war and used very little since. I knew the old Austins were very reliable, but I have been particularly struck by the quality of it. The leather upholstery is like new; the instrument panel is a joy, composing of an excellent set of instruments, including a clock matched by a speedometer with a trip, petrol gauge, ammeter, oil pressure gauge, and separate instrument panel switch.

In spite of the "cart-type" suspension, the car is most comfortable to ride in; admittedly it is slow and heavily built, and it would be silly to say we have not progressed today, but I feel a little more of this old car's quality and the attention to detail is something the British manufacturers need to put into their cars today, when often starter controls, choke controls, and the other little buttons on the dash "come away in your hand."

No doubt the costs dept. have a lot to do with this in the big car factories—this I know is true, as I have worked in the drawing office of one big concern.

Broadstairs, Kent. F. T. ALEXANDER PREBBLE.

Economy Motoring

Experience With Ford Anglia. A correspondent recently expressed surprise that another reader's 1,172 c.c. Ford van is able to give almost 40 m.p.g. This model is not regarded as particularly economical, but my experience of an Anglia purchased new early this year suggests that it need not be extravagant. I fitted the official set of economy jets and choke tube, and was rewarded with improvement of 4 m.p.g. in petrol consumption, without any noticeable fall in performance. I

Opinions expressed on these pages are those of our correspondents, with which The Autocar does not necessarily agree. Letters intended for publication should be addressed to the Editor, The Autocar, Dorset House, Stamford Street, London, S.E.1.

Correspondence

understand there is some loss of performance at high speed, which would not normally be indulged in by those interested in economy.

My vehicle is used mainly for pleasure and, therefore, away from the densest traffic. Cruising at 50 m.p.h. where conditions permit and making free, though not unnecessary, use of the car's acceleration, I have obtained almost exactly 40 m.p.g. over the last 3,000 miles.

One accepts that under the less favourable conditions of congestion, stop—start and low-gear motoring, poorer results will naturally be obtained. Incidentally, I do not use viscostatic oil, upper cylinder lubricant or oil additive.

Luton, Bedfordshire. NORMAN H. COX.

Do They Still Exist?

Little Ponton's Whalebone Arch. Your contributor, Alan Hess (25 July), asks about the jawbones of a whale which used to bridge the A1 main road a few miles from Grantham. This arch was the subject of correspondence in the *Grantham Journal* a long time ago. Mr. W. Willard, librarian of the Grantham Public Library and Museum, has been able to provide me with early photographs.

The story goes that it was something of a fashion to erect such bone arches on estates in the eighteenth century. Tradition speaks of jawbones, but this does not sound very likely. The arch to which Mr. Hess refers was, in fact, at Little Ponton, and today no more remains than wooden stumps, one on each side of a road, near the present A1 at Little Ponton. The arch was possibly erected by a Mr. Daye, who owned the parish, and was, before he went to live there, a seafaring man. On the north wall of the chancel of Little Ponton church there is a tablet to the memory of William Daye, who died on 8 April, 1741.

Apparently the bones were first fixed in the ground, but later they were raised and mounted on wooden posts, possibly to protect them and to give more room for traffic to pass under them. The arch was intact at least until the late 1920s and according to very early memories, had changed little except that the bones had become greener and appeared more like wood.

Grantham. G. LARGE (Mrs.).

[One of the photographs referred to is reproduced below. A similar though smaller arch was to be seen at Rothwell, near Leeds, after the war and is thought to be still intact.—ED.]

Diesel v Petrol

Proof of the Pudding. The representative performance figures of petrol and diesel engines given in M. V. Suck's letter (20 June) are most interesting and debatable. I think a lot of people would like more justification, particularly as regards fuel consumption. I should like to ask:

(a) Does *minimum* specific fuel consumption give a true picture of a petrol-engined vehicle's road performance?

He quotes—for a high-efficiency car engine—a minimum b.s.f.c. of 0.45 pints per h.p. hour at full load, and 0.5 at half-load. What are the figures at one-quarter and at full r.p.m.? I think he will find that part-load, high-speed figures are most disappointing; and at one-quarter load, full r.p.m., the b.s.f.c. may be 0.8 or more.

(b) Does he consider the diesel engine's part-load b.s.f.c. to be typical?

Most diesels have a lower b.s.f.c. at half-load than at comparable full-load speeds. Furthermore, the variation at different speeds is normally very small—say 5 per cent from half to full r.p.m.

The proof of the pudding, of course, is the fact that a diesel engine will produce 50-80 per cent more m.p.g. on the road—because an engine does not always operate at its *best* b.s.f.c. conditions. A petrol engine suffers much more than a diesel. (I will produce a report of a petrol engine that exceeded 2 pints per h.p. hour at 15 per cent throttle!)

Mr. Suck must, therefore, have some gimmick which justifies his claim that his petrol engine has a fuel consumption "very nearly equally good" to a diesel.

There are two other points from his comparative table. Why are h.p. figures all given at 2,500 r.p.m.? Is this a magic number? And why cannot "developed" diesel figures be given? Does he exclude the benefits of exhaust-driven turbo-chargers to reduce the specific weight of the diesel, and reduce its fuel consumption even more? No, Sir, I must remain unconvinced.

Swindon, Wiltshire. "A. SQUIRT."

Defence of the Diesel. I found the letter on Diesel versus Petrol engines very interesting; however, I would like to defend the diesel engine.

A two-stroke diesel engine, which is inherently smoother than a four-stroke of the same number of cylinders, is capable of developing almost twice as much power as a four-stroke of similar capacity.

As an example, the 9.6-litre A.E.C. four-stroke develops 125 b.h.p. The Foden two-stroke of 4.1-litres develops 126 b.h.p. This is an average of 30.5 b.h.p. per litre, which compares favourably with the 2.5-litre Ford Zephyr engine, which develops 85 b.h.p., an average of 34 b.h.p. per litre. Specific weight of the Foden engine is 8.75 lb per b.h.p., and I would be interested to know the specific weight of the average petrol engine.

If £200 was spent on modifications to a petrol engine, surely its specific weight would be increased, it would cease to be smooth, it would become inflexible, and a high compression ratio would cause pre-ignition, necessitating fuel injection, so why not spend it on a diesel engine?

Even assuming a comparable specific consumption in lb/b.h.p./hour could be achieved, the diesel would still gain, because diesel fuel has a higher calorific value than petrol.

Regarding cost, I would imagine that the price differential could be reduced substantially, if the market for diesel engines warranted their mass production on a scale similar to that of petrol engines, although injection equipment would still be a costly item. However, fuel injection for petrol engines shows very promising results, and may in time supersede the carburettor, so little is gained.

I would very much like to hear further opinions.

Ilkley, Yorkshire. A. J. ASQUITH.

[Gross output of the Ford Zephyr engine is 90 b.h.p., and specific weight is 4.82 lb per h.p.—ED.]

Lament for Riley

"Ominous Circumstance Overlooked." Your correspondence columns recently have featured many letters from Riley enthusiasts concerning the new "B.M.C. Riley" 2.6 and 1.5 models. Many of these letters have been very entertaining, but one rather ominous circumstance surrounding the introduction of the 1.5 appears to have been overlooked by the protagonists of both old and new type Rileys.

It is generally understood that, with the possible exception of the engine and certain fittings, the Riley 1.5 was originally the replacement Morris Minor. It is also understood that the introduction of the new Minor has been shelved as a result of

An old photograph of the whalebone arch at Little Ponton, near Grantham, referred to in the letter on this page headed "Do They Still Exist?"

the continuing demand for the existing Morris Minor 1,000. If this is so, the Riley 1.5 and companion Wolseley 1500 obviously have been released for the sole purpose of recouping money which had been expended on body press-tools for the replacement Minor. In other words, had it not been for the success of the Morris Minor 1,000 we would have had no Riley 1.5 and the marque might have disappeared altogether, in so far as 1½-litre capacity was concerned.

The enthusiasm expressed by owners of the old 1½- and 2½-litre models is commendable, but the fact that these models have been dropped is surely due to one thing only, lack of sales—the only factor which is likely to impress B.M.C. For this reason alone I wish the Riley 1.5 every success. If the sales of the new models soar to record heights, perhaps better things may be in store for us in the future. After all, the introduction of the MGA Twin Cam indicates that B.M.C. have not lost all interest in the o.h.c. engine, and that they will produce what the enthusiasts want where the demand is found to be sufficiently high.

Stratford-on-Avon. R. HIGHAM.

[This correspondence is now closed.—ED.]

Parking Meters

"Motorist Has Already Paid." Your leading article on parking meters (25 July) raises a controversial question in which my own readers, the garage operators, have shown a considerable interest ever since the scheme was mooted. I am informed—rightly or wrongly—that a great deal of the garaging space in West London is not occupied. Perhaps the charge which is imposed through the medium of the parking meter might encourage the motorist to make more use of the facilities which the motor trade provides.

Be that as it may, the ethics of the parking meter still remain in question. I believe it was Lord Lucas who raised this matter originally in the House of Lords, when he challenged the right of any authority to let off for remuneration sections of the Queen's highway, and I remain firmly of the opinion that his protest was justified.

In the old days the Excise licence of a vehicle was devoted to the maintenance of the roads; today it has become absorbed in the general revenue. The tax which a motorist pays, therefore, is not devoted to the mechanical process of making, mending or extending roads, but is simply and solely a payment which he makes for the right to use those roads. That distinction needs careful observation, for it is germane to the installation of parking meters.

If a motorist has paid to use the road—note the word "use" as distinct from "maintain"—and the payment which he makes is uniform throughout the country, then what portion of the road he uses, whether it is in the West End of London or on the moors of Yorkshire, is immaterial. He is entitled to that use. If his car is 5ft wide and he motors for 200 miles during a day, he has used 200 miles by 5ft of road. If, on the other hand, he parks that car, he probably uses only 18ft by 5ft of road and has not demanded the same value for his money in terms of road usage.

The fact that a great many other motorists wish to use the piece which he is occupying is neither here nor there; they should have got there first. The same applies in a bus queue.

The finger of criticism might be pointed at the parker, the critic saying: "You are using space which I wish to occupy." The reply from the parker surely is: "You constitute a nuisance to me by requiring me to move." The fact that the cars in a given parking area change every so often, according to a parking meter, does not reduce the total obstruction offered. It matters not one jot to through traffic whether a car on space "A" is the same car throughout the day, or space "A" is occupied by several cars in turn. The point is that "A" is occupied, and my contention is that, as the motorist has paid his licence, he is entitled to that occupation.

If the road licence were devoted, as was originally the purpose, to the *maintenance* of the roads, none of these arguments would apply but once that fund became diverted to general revenue and the tax paid became a licence for *use* of the road, any attempt to interfere with the parker is to despoil him of a right for which he has paid hard cash.

The ethics of the parking meter, I submit, therefore are wrong, and the institution of this device is totally unjustified.

G. E. THOMAS, M.I.M.I.,
London, S.E.1. Editor, *Motor Trader*.

For Invalids

Request for Information. Can any reader tell me of a car which has been altered to permit an invalid in a wheel-chair to be pushed into it, and fixed in a position by the side of the driver?

Ruislip, Middlesex. H. J. CONDUIT.

[Letters will be forwarded.—ED.]

RAIL INTO ROAD

A Case for Conversion. Mr. G. L. Palmer (25 July) raises several points which are typical of an average motorist's objections to conversion and which are no doubt the cause of so many road users "looking this gift horse in the mouth". If readers will look at a map showing the new motorways and ask themselves "how many of my regular journeys shall I make along these roads?" I think most will agree that, despite their many virtues, motorways built on virgin land are not a complete answer to our problems. Authority needs constant prodding, and few questions in this field can be more important than the Railway Conversion League's contention that we are not only spending £3 million to £4 million per week on an obsolete form of transport but are, at the same time, depriving the bulk of our traffic of the use of the nation's best routes.

Taking Mr. Palmer's points in turn; Brigadier Lloyd's figure for conversion costs (£30,000 per mile) is based on an actual estimate by a reputable firm for converting a single line railway into a 22ft road—surely one of the more expensive types of conversion. During the conversion period, the task would be tackled line by line, long-distance traffic diverted (as happens already when there is a rail crash) and local traffic carried by other forms of transport. Presumably no one would be rash enough to close all the railways and then start converting all the lines at once, thereby throwing all the traffic on the roads for a time. There is food for thought, however, that the burden of this extra one-sixth of the nation's traffic might be a lesser burden than the present 7 per cent per year increase will be in a few years.

Mr. Palmer need not fear that the converted railways will be choked with vehicles carrying the present rail traffic. B.R. have not disputed Brigadier Lloyd's estimate that 31,450 vehicles (none of them working at more than two-sevenths of capacity) could handle all the present traffic. In practice a more varied fleet would probably be used, so let us quadruple this figure, but even then would these vehicles be able to jam 20,000 miles of motorway?

In considering handling coal by rail Mr. Palmer ignores all the signals staff and the like needed for a train to move, also the time taken to assemble a train; 5,000 20-ton freighters could produce B.R.'s ton-mileage without difficulty. Your correspondent will doubtless be surprised to learn that B.R. averages only 90 passengers or 159 tons of freight per train. Again the capacity of a road traffic lane is greater than a rail track of equivalent width, all other factors being equal; this is, however, rather academic, since B.R. show no signs of requiring to use lines to capacity.

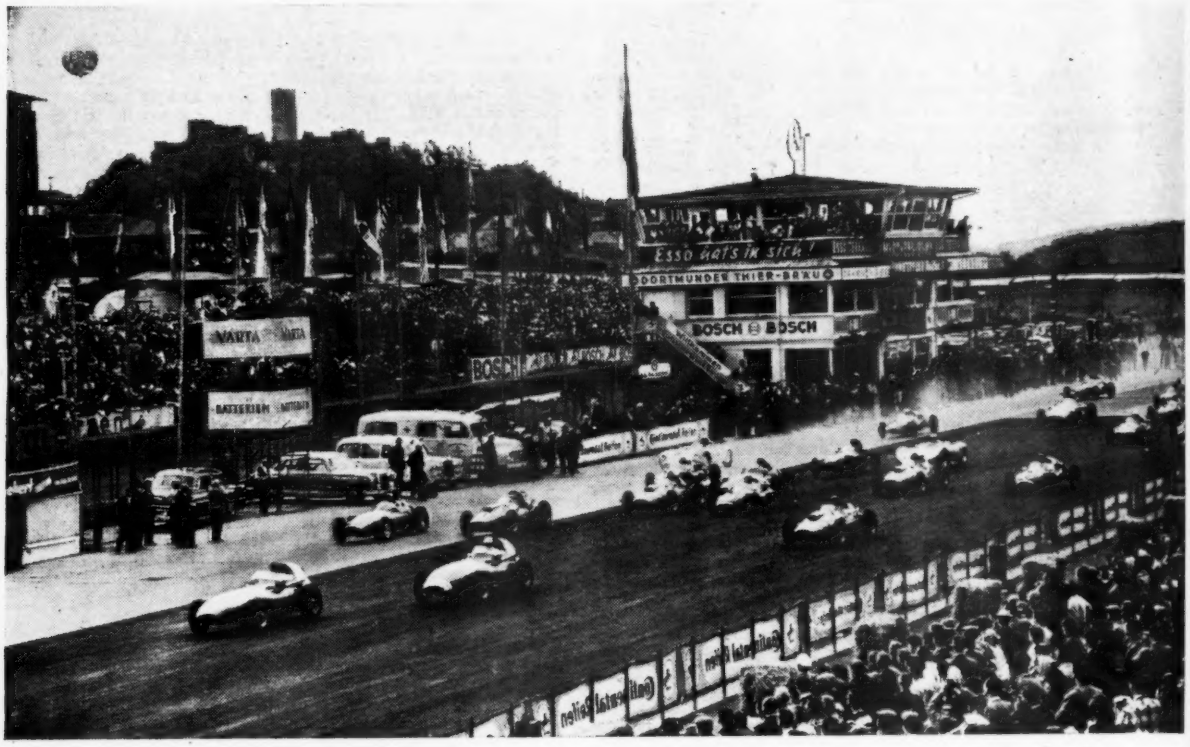
Safety is an old faithful but I have never seen the anti-conversion line so weak as this, where we are required to consider as average the risks from explosives and inflammable liquids carried by road vehicles. In passing, would not a rail smash involving a train load of these items be rather a mess? All our petrol reaches the filling stations by road tanker at present, so no new hazards are involved. In more general terms, it is already established that public transport is as safe by bus as by train (*Road Accident Statistical Review, No.* 83, *Sept.* 1954) while the traffic using the reserved motorways would not, by definition, be able to be involved in accidents concerning pedestrians and cyclists. Rail safety is impressive only because the average person spends comparatively little of his time exposed to the risks of a rail mishap.

Buses with all the comforts of railway trains and more have been produced, and are in daily use in countries which have suitable roads. The public transport traveller will be better catered for than ever before. If speed is so important (why should a motor coach not be able to travel as fast as a train along the same alignment?), why not fly? Have B.R. any plans for expresses to compete with Edinburgh-London B.E.A. Viscounts, which do the trip in 1½ hours? For certain types of transport neither rail nor road is supreme, but railways have no inherent advantages over road vehicles to justify their monopolising the nation's best routes.

Worcester. H. BARRS.

What of Disused Tracks? G. L. Palmer's "counter-argument" (25 July) was undoubtedly very convincing so far as heavy and unusual freight loads were concerned, but is there not a case for converting into roads some of those railway tracks now no longer used?

Liverpool 1. STANLEY BLAKE RENCE.

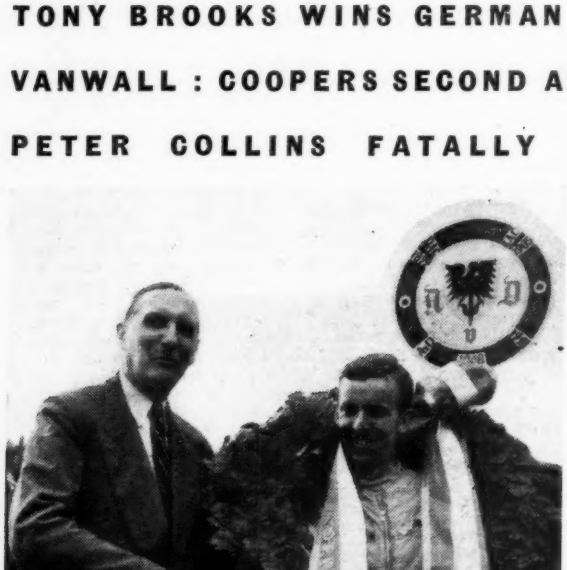


The start: Brooks' Vanwall leads, with Moss' Vanwall close behind. Hawthorn's Ferrari is just behind Moss, and Schell (B.R.M.) is pressing through, on the inside. 9min 26.6sec later they were round again, Moss in the lead

Sunshine and Shadow in

TONY BROOKS WINS GERMAN G.P. FOR VANWALL : COOPERS SECOND AND THIRD

PETER COLLINS FATALLY INJURED



Tony Brooks, heavily garlanded in oak leaves, smiles in his moment of triumph

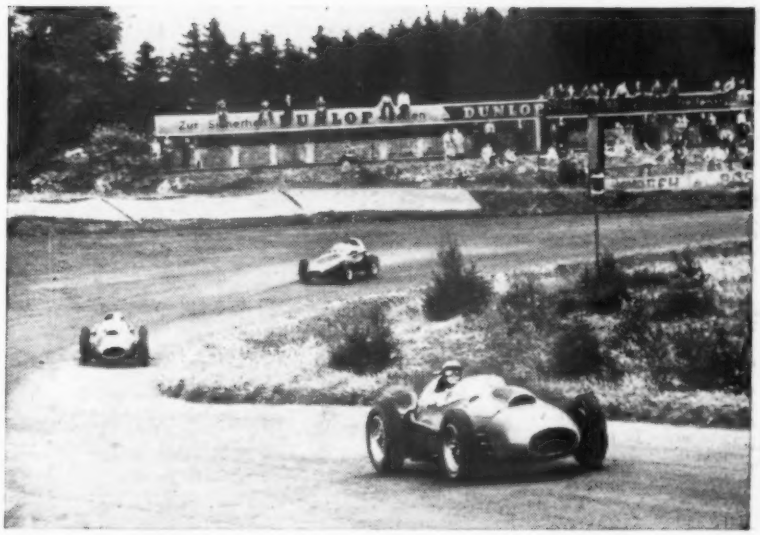
AFTER a magnificent drive in which he showed himself to be a fighter and a sound tactician, as well as one of the world's finest drivers, C. A. S. Brooks won last Sunday's German Grand Prix—becoming the second British driver ever to do so. Stirling Moss, also with a Vanwall, led the race for the first three laps, establishing a new lap record in 9min 9.2sec before retiring during the fourth lap. Then Brooks, lying fourth behind Collins' and Hawthorn's Ferraris, took

STARTING GRID

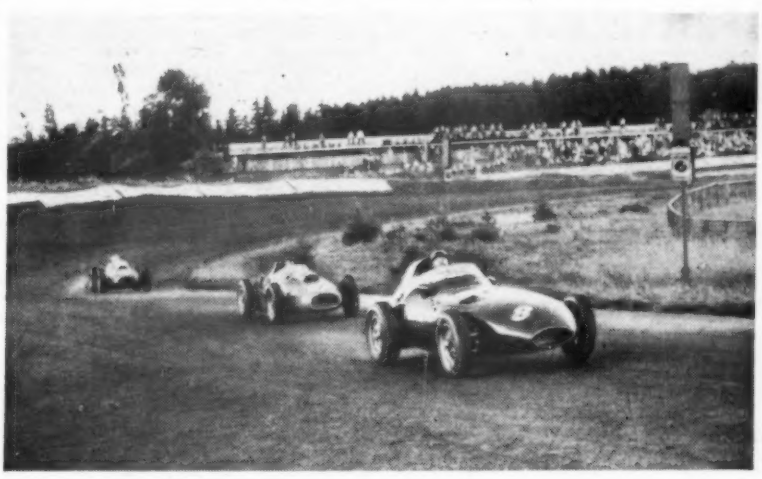
P. Collins No. 2 Ferrari 9min 21.9sec	S. Moss No. 7 Vanwall 9min 19.1sec	C. A. S. Brooks No. 8 Vanwall 9min 15 sec	J. M. Hawthorn No. 3 Ferrari 9min 14sec
M. Trintignant No. 11 Cooper 9min 36.9sec	R. Salvadori No 10 Cooper 9min 35.3sec	W. von Trips No 4 Ferrari 9min 24.7sec	
I. Burgess No. 26 Cooper 9min 55.3sec	P. Hill No. 23 Ferrari 9min 48.9sec	J. Behra No. 5 B.R.M. 9min 46.8sec	H. Schell No. 6 B.R.M. 9min 39.6sec
A. Marsh No. 30 Cooper 9min 57.5sec	E. Barth No. 21 Porsche 9min 57.2sec	B. McLaren No. 20 Cooper 9min 56sec	
R. Gibson No. 19 Cooper 10min 55sec	W. Seidel No. 22 Cooper 10min 21sec	I. Bueb No. 28 Lotus 10min 2.6sec	G. de Beaufort No. 18 Porsche 10min 1.5sec
J. Bonnier No. 16 Maserati 9min 42.7sec	H. Herrmann No. 17 Maserati 10min 13.5sec	J. Brabham No. 24 Cooper 9min 43.4sec	
B. Naylor No. 29 Cooper 10min 17.9sec	C. Allison No. 12 Lotus 9min 44sec	C. Goethals No. 27 Cooper 11min 22.9sec	G. Hill No. 25 Lotus 18min 56sec

over the chase, eventually catching and passing the two Italian cars after one of the most exciting battles in Grand Prix racing. In the formula 2 class, which was run concurrently with the Grand Prix, Bruce McLaren's 1½-litre Cooper held the lead from the 11th to the 15th, and final, lap.

Brooks' great triumph, however, was dimmed by tragedy. During the battle for leadership in the larger class, Peter Collins crashed in his Ferrari while doing his best to retake the lead on the eleventh lap: he died later that evening from his injuries.



Above: Lap 10 begins, at the South Curve, behind the pits, with Peter Collins leading Mike Hawthorn and Tony Brooks. Below: A lap later, at the same point, with Brooks just through into the lead, ahead of Collins and Hawthorn



Germany

DURING THE first practice session on Friday afternoon, Moss' best lap in 9min 19.9sec was unbeaten—and was only 2.5sec outside Fangio's out-and-out record of 9min 17.4sec with the Maserati in last year's race. A maximum reading needle, fitted to the Vanwall's rev-counter at Moss' request, showed that this speed had been achieved without exceeding 7,200 r.p.m., indicating that, in the stress of the race, the car could better this time. Also at Moss' request, the rear wheels had been set with a negative camber, in contrast with Brooks' car which had the rear wheels at right angles to the rear axle centre-line. With this arrangement, giving a slightly earlier break-away at the rear than with Moss' car, Brooks was delighted at his Vanwall's handling.

The car, in fact, was suffering from intermittent misfiring between 5,000 and 6,000 r.p.m.—due, it was thought, to the changes in altitude at the Ring, and the fact that with fuel injection the mixture settings are extremely critical on the present aviation spirit. His best time was 9min 33.2sec on the Friday. After his somewhat expensive season in engines—largely because of valve failure—G. A. Vandervell had only two race-worthy units at the Ring, though three cars were there.

Lacking a car to drive, Lewis-Evans practised in the factory-entered central-seater Porsche formula 2 car until Barth, its nominated driver, who had been injured at Freiburg the previous weekend, turned up on Saturday, and Lewis-Evans went home to drive at Brands Hatch.

Between Moss' and Brooks' Friday times came the three Ferraris of Hawthorn, Collins and von Trips, with 9min 21.9sec, 9min 26.8sec and 9min 29.3sec respectively. Ferrari brought along five cars—Nos. 2, 3 and 4 formula 1 cars, and No. 23 (Phil Hill) formula 2 car; in addition there was a new car, also numbered 3, with coil-spring suspension front and rear (instead of the customary transverse leaf spring at the back). This car had Girling telescopic dampers within the front coil springs, and the formula 2 car used Koni telescopic dampers within the coil front springs in front; a normal, transverse leaf spring was used at the back.

During Saturday's practice session, Hawthorn and Brooks lapped in the remarkable times of 9min 14sec and 9min 15sec respectively; Moss got down to 9min 19.1sec, giving him third place on the grid, and Collins' and von Trips' Ferraris came next, with 9min 21.9sec and 9min 24.7sec.

After the Saturday session, the Ferrari mechanics set about a reshuffle, removing the engine from the coil-sprung No. 3 and putting it in Collins' No. 2 car. Finally the numbers on Collins' No. 2 and Trips' No. 4 cars were changed around—the mechanics taking great care to avoid painting over the scrutineers' stamps on the white paint—and everyone was happy.

On the final list of times, following von Trips' Ferrari in sixth place, came Salvadori, with 9min 35.3sec in a brand-new works formula 1 Cooper to which had been fitted the 2.2-litre engine that had run at Spa, Rheims and Silverstone. Trintignant, in Rob Walker's 2.2-litre Cooper, came seventh, with 9min 36.9sec, and Schell's and Behra's B.R.M.s next, with 9 min 39.6sec and 9min 46.8sec respectively.

Behra, during Friday's practice, had a minor accident when driving Schell's car after light rain. The practice car was, therefore, brought in for the race; it seemed slightly slower than Schell's car.

The remainder of the practice times are shown on the starting grid opposite, the cars numbered from 18 onwards being formula 2 (1,500 c.c.). Cliff Allison's formula I Lotus had a 1,960 c.c. engine.

On the morning of the race there was considerable consternation in the paddock when the organizers said that Jack Brabham had completed only five of the requisite six practice laps in his race car, his other three being in the practice car, so that he had not qualified for a grid position; his excellent 9min 43.4sec, fastest of the formula 2 times, meant nothing. Cliff Allison, too, was in trouble; it was said that he had not presented his car for scrutineering before the Friday practice session, so that his 9min 44sec gained him nothing. Herrmann, Bonnier and Graham Hill also had failed to complete the requisite six laps, so all were relegated to the rear, the starting grid finally being as shown on the opposite page.

That was how it should have been; in fact, it was something of a jumble, the cars

Stirling Moss, leading and setting up the new lap record during the third lap of the race, swings round the Karussel—only to retire on the following lap

GERMAN G.P. . . .

being only roughly in this formation. However, the organizers were satisfied, and the flag dropped. Brooks jumped into the lead, followed by Moss and by Schell, whose B.R.M. had shot up from the third row, running alongside the pits within the white line. Next came Collins, Hawthorn, von Trips, Behra—and the massed field of 18 more cars.

After the tremendous excitement of the start, the crowds settled down for the long-ish wait until the field came round at the end of the 14-mile lap, the ingenious scoreboard showing, by means of a succession of lamp bulbs, the position that the leaders had reached on the circuit.

At last they came round, with Moss out in front—standing lap 9min 26.6sec (90.04 m.p.h.)—followed by Hawthorn, Collins, Brooks, von Trips, Schell, Behra, Allison, Salvadori, and Phil Hill's Ferrari leading the formula 2 class. With the Drivers' Championship so much in the news these days, the crowd settled down to watch Moss and Hawthorn fighting it out for the much-needed Championship points. At the back of the field, Brabham brought his Cooper in to the pits, the nose bent and festooned with grass. With its front suspension deranged, the Cooper was wheeled away to the dead car park.

Another long wait, the cars still being closely bunched—the Nurburgring lap is rather long to sustain continuous spectator interest—then came Moss, pulling away from the two Ferraris, and Hawthorn, now followed closely by Collins. Brooks still held fourth place, but Schell had moved up to fifth, followed by Behra, Allison, Salvadori—and von Trips, who brought his Ferrari in to the pits, losing another two places to Phil Hill and McLaren as the car stood there.

As at Silverstone, Moss continued to build up his lead. Lap 2 was completed in 9min 16.6sec—a new record, almost a second faster than Fangio's best last year; lap 3 was in 9min 9.2sec, yet another record, and one that was unbeaten during the rest of the eventful race. By the end of lap 3 he was 17sec ahead of the second car—now Collins' Ferrari, which led Hawthorn by a few yards. Brooks, still in fourth place, now led Behra and Allison, Schell having dropped back to seventh.

In the rear, de Beaufort's Porsche RSK had retired at the pits, Bonnier's Maserati was missing, having blown up, and Seidel's R. R. C. Walker formula 2 Cooper had called at the pit; the right-side front wheel seemed distinctly wobbly but he was sent off again.

Again as at Silverstone, Moss' luck was out. At the end of lap 4, round came Hawthorn in the lead, closely followed by Collins. Brooks, some 25sec behind, held third place. Out on the circuit Moss' ignition had cut dead, and he had started the long walk home. Even more remarkable, Cliff Allison, in the 1,960 c.c. Lotus, came round in fourth place, followed by Schell and Salvadori. Hill's Ferrari still led the formula 2 contingent in seventh place, with von Trips, Trintignant and Naylor behind him.

Behra's B.R.M. eventually came round in 15th place, and pulled in to the pit. There was a great deal of bouncing of the front and rear ends of the car, and serious discussion. Though there appeared to be nothing wrong with it, the car was finally wheeled away to the dead car park; four laps gone, and Goethals' Porsche, too, found its way to the pits to retire—15 cars left out of 25.

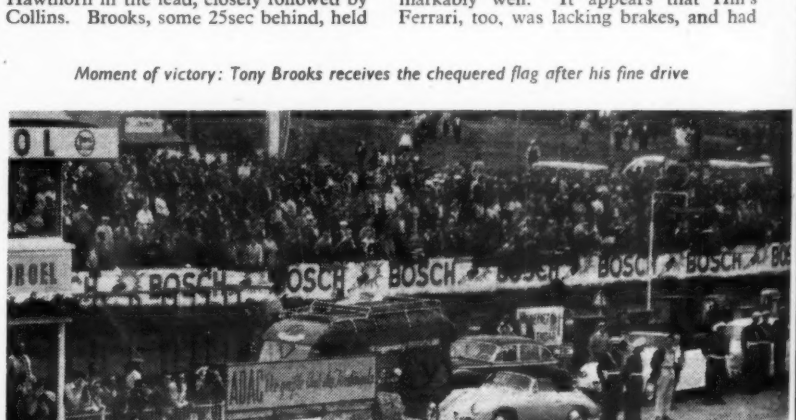
With Moss out of the race, the two leading Ferraris brightened things up by appearing to have a tremendous battle, taking it in turns to pass each other at the pits, and keeping extremely close. In the meantime, the Vanwall pit had given Brooks the signal to increase speed. His car was still misfiring slightly between 5,000 and 6,000 r.p.m., though the handling was exceptionally good, "Ah, well," Brooks thought, "this is it. If it blows up, it blows up"—and proceeded to close on the two Ferraris.

Allison, well back, kept his fourth place, now followed by Salvadori, who had passed Phil Hill on the fifth lap.

Meanwhile, it became clear that von Trips' Ferrari was very short of brakes. Instead of passing the pits at full throttle in top gear, he was changing down into fourth as he approached the pits, then down again soon after; he appeared to get down into second before the wide hairpin after the pits, using the engine as a brake.

Phil Hill, too, began to drop back, being passed on the sixth lap by Trintignant, and on the seventh by von Trips who, despite having no brakes whatever (as it turned out later), was doing remarkably well. It appears that Hill's Ferrari, too, was lacking brakes, and had

Moment of victory: Tony Brooks receives the chequered flag after his fine drive



spun, the car now being covered in dust; in view of the failure of this component on two cars so early in the race, it seems time that Ferrari changed to discs.

By the end of lap 8 Brooks had almost caught Hawthorn, now lying second, and the two leading Ferraris, together with Brooks' Vanwall, were evenly spaced at intervals of roughly three seconds. As the three cars passed at the end of lap nine, Collins still held a lead of about three seconds . . . but Hawthorn and Brooks were pretty well neck-and-neck. The crowds in the stands rose to their feet and uninhibitedly cheered, shrieked and waved anything they could get hold of.

Actually, for a few yards after they had passed the pits, Brooks may have held second place, but he had lost it back to Hawthorn before the cars passed again on the far side of the pits. However, as they approached the left-hander at the end of the straight behind the pits, Brooks nipped through on the inside into second place. It was clearly a case of handling and disc brakes against superior maximum speed, for it was by leaving his braking late that Brooks slipped by.

Next time round, Brooks was again just

Graham Hill takes the Lotus Fifteen round the Karussel during the sports and gran turismo race that opened the day

behind Hawthorn, the crowds wild with excitement, and again he took second place as the two cars flew past the pits. As the three leaders ran up the back-leg behind the pits, he had gained enormously on Collins, and, at the same point that he had passed Hawthorn on the previous lap, he nipped past Peter Collins into the lead. These last three laps had been intensely exciting, and even the most phlegmatic of spectators were standing on their seats to cheer.

Brooks' Vanwall was definitely slower than Peter Collins' Ferrari at least, and at one time, when slipstreaming Collins on the previous lap, he had reached 7,700 r.p.m. while he was being "towed." What the Vanwall lacked in top speed, however, it made up amply in brakes and handling, and gained quickly on the twistier sections of the circuit. Observers round the circuit reported that at all times Brooks' car appeared to be perfectly under control; during this battle, he lapped in 9min 10.6sec (92.71 m.p.h.).

In the lap that followed—the eleventh—Peter Collins did all he possibly could to catch Brooks, taking corners, it was reported, in full-lock slides, driving at or beyond the limit. His courage and his will to get the Ferrari back in front were admired by everyone round the circuit. But by the end of the lap he was missing. Brooks' passed, comfortably in the lead followed by Mike Hawthorn in an obviously sick car.

At last the news came through. Collins, while taking the fast, right-hand corner after Pflanzgarten at the 23rd kilometer post, close behind Brooks' Vanwall, had lost control. The car had rolled over several times, throwing the driver out. He died later from his injuries. Mike Hawthorn, following close behind, must have had the intensely distressing experience of witnessing the accident.

After Hawthorn had passed the pits, he was not again seen, the Ferrari having broken down on the circuit. Brooks, with a lead of over three minutes, was given the signal to slow down. Allison's Lotus had called twice at the pits for water, the radiator leaking as the result of a minor bump during practice. Tins of leak-sealing compound were poured in, but the car dropped to the back of the field. Schell, too, had retired.

Salvadori, now the Ferraris and the Lotus had gone, was in second place, followed by Trintignant, von Trips, McLaren (leading the formula 2 cars), Barth, Ian Burgess, Ivor Bueb, Phil Hill, Tony Marsh and Allison; at the end of the 13th lap Bueb retired, leaving ten of the original 25 starters, and gaining a few extra minutes for his hurried journey back to race at Brands Hatch the following day.

Brooks, his lead magnificently won, began to slow; at the end of the 13th lap he was 3min 5sec ahead, and by the end of the 14th, roughly 3 minutes. He went on to become the second British driver ever to win the German G.P., Dick Seaman, in 1938, being the first; and the Vanwall became the first British car ever to win the race—followed by two Coopers, Salvadori's and Trintignant's.

RESULTS: German Grand Prix

(15 laps of 14.17-mile circuit: 212.5 miles.)

1. Vanwall (C. A. S. Brooks), 2hr 21min 15sec, 90.35 m.p.h.
2. Cooper (R. Salvadori), 2hr 24min 44.7sec, 88.11 m.p.h.
3. Cooper (M. Trintignant), 2hr 26min 26.2sec, 87.12 m.p.h.
4. Ferrari (W. von Trips), 2hr 27min 31.3sec, 86.49 m.p.h.

Fastest lap (record): Vanwall (S. Moss), 9min 9.2sec, 92.89 m.p.h.

Formula 2 Race

(15 laps of 14.17-mile circuit. 212.5 miles: Run together with G.P.)

1. Cooper (B. McLaren), 2hr 27min 41.3sec, 86.37 m.p.h.
2. Porsche (E. Barth), 2hr 27min 47.4sec, 86.25 m.p.h.
3. Cooper (I. Burgess), 2hr 28min 14.3sec, 86.06 m.p.h.
4. Cooper (A. E. Marsh), 2hr 28min 24.9sec, 85.93 m.p.h.
5. Ferrari (P. Hill), 2hr 29min 0.5sec, 85.62 m.p.h.

Sports Car and Gran Turismo Event.

(8 laps of 14.17-mile circuit. 85 miles: Run before Grand Prix.)

Sports Cars up to 1,500 c.c.: 1. Porsche RSK (J. Behra), 59min 30.4sec, 85.75 m.p.h.; 2. Borgward RS (J. Bonnier); 3. Porsche RSK (E. Barth).

Gran Turismo Cars. Up to 1,300 c.c.: 1. Alfa Romeo Zagato (H. Schultze), 1hr 8min 56.3sec, 74 m.p.h.; 2. Alfa Romeo Zagato (M. Stern); 3. Alfa Romeo Giulietta SV (R. W. Moser). **Up to 1,600 c.c.:** 1. Porsche Carrera (H. J. Walter), 1hr 6min 2.1sec, 77.24 m.p.h.; 2. Porsche Carrera (H. Linge); 3. Porsche Carrera (F. Hahnl).

LAP-BY-LAP PROGRESS (figures in italics indicate pit stops)

POSITIONS

Laps	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	7	3	2	8	4	6	5	12	10	23	20	26	18	21	11	28	25	17	30	16	22	19	29	27	24
2	7	3	2	8	6	5	12	10	4	23	20	26	18	11	21	28	17	30	25	22	19	27			
3	7	2	3	8	5	12	6	10	23	20	4	11	21	26	18	28	17	30	25	22	27				
4	3	2	8	12	6	10	23	4	11	20	21	26	28	30	5	25	22	27							
5	2	3	8	12	10	6	23	11	4	20	21	26	28	30	22										
6	3	2	8	12	10	6	11	23	4	20	21	26	28	30	22										
7	2	3	8	12	10	6	11	4	23	20	21	28	26	30	22										
8	2	3	8	12	10	6	11	4	23	20	21	28	26	30	22										
9	2	3	8	12	10	11	4	23	20	21	6	28	26	30	22										
10	2	3	8	12	10	11	4	23	20	21	26	28	30												
11	8	3	10	12	11	4	20	21	23	28	26	30													
12	8	10	11	4	20	21	26	28	23	30	12														
13	8	10	11	4	20	21	26	30	23	28	12														
14	8	10	11	4	20	21	26	30	23																
15	8	10	11	4	20	21	26	30	23																

The Sport

By PETER GARNIER

I DOUBT if anyone really expected a Vanwall win in Germany last week-end After being beaten by the British cars in the first few races this season, the Dino Ferraris have been growing faster and faster, and more reliable, until, at Rheims, there was no doubt at all that Ferrari had taken the lead. The run of British victories appeared, temporarily at least, to have come to an end.

However, the race proved that it is not always right to go by form. Moss' Vanwall had negative camber on the rear wheels, and Brooks' did not. In practice, Moss lapped in 9min 19.9sec during the first session, and 9min 19.1sec during the second, without exceeding 7,200 r.p.m. Brooks, on the other hand, with an engine that had an intermittent misfiring between five and six thousand r.p.m., did 9min 33.2sec during the first session and, when the misfiring had been attended to, 9min 15sec during the Saturday session—beaten only by Mike Hawthorn's 9min 14sec, and handsomely under Fangio's lap record of 9min 17.4sec. The latter had been set up under the duresse of a tremendous chase to catch Collins and Hawthorn in last year's race, under the free fuel formula, and many thought it would not be beaten this year.

In the race itself Moss, without exceeding 7,300 r.p.m., managed to get round in 9min 9.2sec, setting up a new (and subsequently unbeaten) lap record on his third lap; during the three laps before the Vanwall retired it was clearly faster than the Ferraris. It did not appear that this was due only to the Vanwall's superior handling and brakes—though these obviously meant a great deal on the very twisty circuit; on the straight stretch up to the pits, the Vanwall was not losing ground to the Ferraris.

With its slight misfiring, Brooks' car was definitely down on speed in the race, but gained tremendously in braking and handling. Out on the circuit, the Vanwall appeared to be perfectly steady, and Brooks was full of praise for its handling. The Ferraris, in contrast, when the drivers were really having a go, looked far less controllable. Despite their superior speed (it was not until he was slipstreaming, and being "towed" by, Peter Collins that Brooks reached 7,700 r.p.m. during the race), however, he twice managed to nip past the Ferraris—first Hawthorn's car, then Peter Collins'—while braking for the left-hander behind the pits. On the twister sections of the circuit—which is most of the Nurburgring—Brooks' Vanwall was definitely the faster.

It is certain that by the end of the race von Trips' Ferrari had no brakes at all; for some time (from the fifth lap) he had been changing down on the approach to the pits, and down again twice, before taking the wide hairpin at the end of the pits straight. Phil Hill's formula 2 car was also suffering in the same way, though not perhaps to the same degree, and he spun it on one occasion.

Brooks' drive was magnificent; it is exceedingly sad that, in the tragic circumstances that arose, it was not acclaimed as it should have been. Many people have felt that, brilliant driver though he undoubtedly is, he may have been lacking somewhat in a fighting spirit. The Nurburgring, however, showed that, as well as the skill, he has all the fight necessary. It was a wonderful performance, in which he made full use of the alternative attributes of a car that was slightly down on maximum speed.

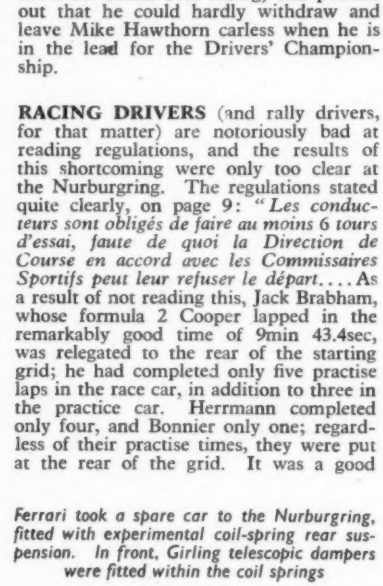
There has been talk this week that, because of Peter Collins' tragic accident, Grand Prix racing may not be the same again . . . that the accident will have far-reaching effects. How this could be so I do not know. First, Enzo Ferrari was reported on Tuesday as having said that he does not intend to give up racing his cars; he confirmed his intention to continue Grand Prix racing, and pointed out that he could hardly withdraw and leave Mike Hawthorn carless when he is in the lead for the Drivers' Championship.

RACING DRIVERS (and rally drivers, for that matter) are notoriously bad at reading regulations, and the results of this shortcoming were only too clear at the Nurburgring. The regulations stated quite clearly, on page 9: "*Les conducteurs sont obligés de faire au moins 6 tours d'essai, faute de quoi la Direction de Course en accord avec les Commissaires Sportifs peut leur refuser le départ....*" As a result of not reading this, Jack Brabham, whose formula 2 Cooper lapped in the remarkably good time of 9min 43.4sec, was relegated to the rear of the starting grid; he had completed only five practise laps in the race car, in addition to three in the practice car. Herrmann completed only four, and Bonnier only one; regardless of their practise times, they were put at the rear of the grid. It was a good thing that the Stewards had not decided to "*leur refuser le départ. . . .*," in accordance with Article 12 of the regulations.

There was also the question of scrutineering, Article 11, page 7, stated that *before practise*, all cars—practice cars included—must be presented for scrutineering, and that they would receive the scrutineers' stamp. Cliff Allison's Lotus was not presented for scrutineering at this time, and so was put at the rear of the grid. Needless to say, all this caused a fair amount of ill feeling, but the regulations were clear enough.

With all the expense and trouble of preparing a car for a race, it seems a little stupid to throw away chances by not reading the rules—which is, really, very little trouble, and costs nothing.

Ferrari took a spare car to the Nurburgring, fitted with experimental coil-spring rear suspension. In front, Girling telescopic dampers were fitted within the coil springs



NEXT ROUND in the Drivers' Championship is the Portuguese Grand Prix on 24 August. Ferrari has entered three cars, drivers being Mike Hawthorn, W. von Trips and either Phil Hill or Olivier Gendebien. Privately-entered Maseratis will be driven by Maria Teresa de Filippis, Godia and Bonnier, the three cars receiving official assistance from the factory. Ken Kavanagh, too, is likely to drive his 250F. Provisional entries from this country include Vanwall (Moss, Brooks and Lewis-Evans), B.R.M. (Behra, Schell, and Trintignant or Masten Gregory); Cooper (Salvadori and Brabham); Lotus (Allison and Hill).

Before the race there will be, as at Monza, an event for Junior Formula cars built in Italy. At least 15 cars, ten driven by Italian and five by Portuguese drivers, will be on the starting grid.

AND NOW FOR all the Championships that have been affected by the German Grand Prix, and the Brands Hatch meeting on August Bank Holiday.

The Drivers' Championship is still led by Mike Hawthorn, whose 30 points were unaffected by the German race. Second is Moss, who scored one point for fastest lap, and now has 24 points. Third is Tony Brooks, who previously had eight points and has added a further eight for his win, giving a total of 16. Schell and Salvadori are equal fourth, with 13 points, Salvadori having scored six for

COMING SHORTLY

AUGUST 9.—West Essex C.C., race meeting, Snetterton, 1.30 p.m.
10.—Circle, Chiltern and Harrow Car Clubs, Sprint Meeting, Brands Hatch.
10.—Sevenoaks and District M.C., *Concours d'Elégance*, Grasshopper Inn, Moorhouse, Westerham, 2.30 p.m.
10.—S.U.N.B.A.C., driving tests, Vono Works, Dudley Port, Staffordshire, 2 p.m.
10.—Romford Enthusiasts C.C., driving tests, Parade Ground, Warley Barracks, Brentwood, 2 p.m.
16.—Jaguar D.C., sprint meeting, Wellesbourne Aerodrome, near Stratford-upon-Avon.
16.—750 M.C., Six-Hour Relay Race Meeting, Silverstone, 1 p.m.
16.—Arkley M.C., Sporting Sortie, Old Bell, 11 a.m.
16.—Cheltenham M.C., rally, Coronation Square, Princess Elizabeth Way, 8 p.m.
17.—Yorkshire S.C.C., B.A.R.C., and East Yorkshire C.C., autocross, Wharfedale Grange, Harewood, 2 p.m.
17.—East Anglian M.C., autocross, Wolves Hall, Tendring, near Colchester, 2 p.m.
17.—Fiat 500/600 Club, scavenger hunt. The Cock, Church End, Sarratt, 12 noon
24.—Portuguese Grand Prix, Oporto.
27-31.—Liège-Rome-Liège Rally.
30.—Midland A.C., Shelsley Walsh meeting.
30.—B.R.S.C.C., race meeting, Brands Hatch.

THE SPORT...

being second at the Nurburgring, and Schell having made no change to the total of 13 that he had before the race. Sixth is Trintignant, with 12; Fangio, Lewis-Evans and von Trips come next, with 7 points each; Behra has 6, Brabham and Allison 5 each, and Olivier Gendebien, a single point.

In the Constructors' Championship, Ferrari still leads, with 39 points. Next come Vanwall (33), Cooper (30), B.R.M. (12), Maserati (6), and Lotus (5).

And, following the formula 2 section of the 212.5-mile German G.P., and the formula 2 race at Brands Hatch last weekend, the positions in *The Autocar* Formula 2 Drivers' Championship are as follows:

		Points
1	B McLaren	33
2	S. Lewis-Evans	28½
3	I. Burgess	27
4	C. A. S. Brooks	17
5	C. Allison	16½
6	H. Taylor	11
7	J. Brabham	9¼
8	G. Hill, A. E. Marsh	9
10	G. Wicken	7
11	J. Russell, I. Bueb	6
13	D. Taylor	3½
14	T. Bridger, S. H. Jensen	3
16	S. Moss	2
17	R. Gibson, L. Leston and S. Ouvaroff	1

THE FRENCH authorities have waived their maximum set-speed limit of 70 k.p.h. for a few sections in the Liège-Rome-Liège this year (27 August). Required average speed over the following six Alpine passes will, therefore, be 72 k.p.h.; Col d'Izoard, Col d'Allos, Col de St. Jean, Col de Soubeyrand, Col de la Chaudiere, Col de l'Echarasson. In view of the fact that the Izoard and Soubeyrand had to be scrubbed from the Alpin results because it was impossible to maintain even the *lower* top average over them, there should be no clean sheets in this year's Liège-Rome-Liège.

Already one of the toughest rallies in the Calendar—if not the toughest—this year's event should break all records. In addition to the higher average over these sections, the event is to last for 96 hours non-stop, instead of the previous 90—and this with only two drivers in the car!

The Liège-Rome-Liège, incidentally, does count for the Rally Championship; it was stated last week that it does not.

NEXT BIG RACE at Brands Hatch will be the International Kentish 100, on 30 August, run, of course, by the British Racing and Sports Car Club. Principal race of the meeting, and one that should be exceedingly interesting, will be the Kentish 100 84-lap race for formula 2 cars; it will be run in two 42-lap heats, and the entry has been limited to 14 cars. It will count towards *The Autocar* Formula 2 Championship. At this early stage, entries received are magnificent, and include Stirling Moss in R. R. C. Walker's Cooper, striking up, once more, the Moss-Alf Francis partnership; Maurice Trintignant will also drive one of Rob Walker's Coopers. Harry Schell is entered with a Cooper, and Roy Salvadori and Jack Brabham will drive factory-entered Coopers. Stuart Lewis-Evans is down to drive the British Racing Partnership Cooper, and Cliff Allison and Graham Hill will drive works Lotuses. That is not bad, for a start. The date is 30 August.

COPIES, in English, of the Tour de France regulations are available from *L'Equipe*, 10 Fauborg Montmartre, 10, Paris.

MOSCOW RADIO claim that Russian drivers have set up two new International class records, previously held by Italy. Both are for the flying kilometre, a 250 c.c. car having recorded 103.5 m.p.h., and a 350, 137.5 m.p.h.

RACE AND RALLY REGULATIONS RECEIVED

Sussex C. and M.C.C.—Driving test meeting, Goodwood circuit, 30 August. Each club team will consist of three vehicles, of which two must be standard production saloon cars. Entries will be divided into six classes. Entries (£2 2s per team, 7s 6d individual entry) to R. Gillam, 95 Applesham Way, Portslade, Sussex, by 23 August.

Stockport M.C.—The Widgery rally, September 14, starting from Fiveways Hotel, Macclesfield Road, Hazel Grove, at 10.30 a.m. The route will be approximately 170 miles finishing at the Blacksmiths Arms, Henbury, near Macclesfield. Entries to D. Moorhouse, 25 Abingdon Road, Bramhall, by 10 September. Entry fee 12s 6d.

B.A.R.C. (Yorkshire and N.W. Centres).—The War of the Roses rally, 14 September, starting from the George and Dragon Hotel, Woodhead, Cheshire, at 10.30 a.m. The course will be over a distance of approximtaely 140 miles and will include a varied selection of tests. Competitors will be divided into three classes. Entries to G. A. M. Baxter, 1 Park View Road, Heaton, Bradford 9, by 9 September. Entry fee £1, entries limited to 80.

Morecambe C.C.—Illuminations rally, 13-14 September, starting from Morecambe, Ulverston, and Shap Village from 9.30 p.m. The route will be approximately 180 miles for the experts and 140 miles for the novices, to be run in three stages. Entries to C. Hall, Ingledene, Whittington, Kirkby Lonsdale, by 10 September. Entry fee £1 5s, plus £1 10s deposit on watch. Entries limited to 75.

S.U.N.B.A.C.—Race meeting, 6 September Silverstone circuit, starting 12 noon. High-speed trials and races for sports and racing cars and motor cycles. Entries to J. D. Woodhouse, 106, Jocked Road, Sutton Coldfield, by 20 August.

B.A.R.C. (Yorkshire Centre).—An Autocross will be held at Wharfedale Grange, Harewood, on 17 August, to be promoted jointly by the B.A.R.C., Yorkshire S.C.C. and East Yorkshire C.C. The event will begin at 2 p.m., over a half-mile, undulating course. Entries to R. J. Wilson, Woodlands, Gildersome, Nr. Leeds, by 11 August. Entry fee £1, to 14 August £1 10s.

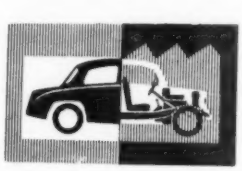
Bugatti O.C.—Sixteenth National Open speed hill-climb, 14 September, Prescott, near Cheltenham. Events for sports, racing and grand touring cars. Entries to L. J. R. Taylor, Cherrytree, Aston, Market Drayton, Salop, by 26 August. Entry fee £2 2s per event.

London M.C.—Restricted sprint meeting, Brands Hatch, 26 October. The sprint will be over one standing-start and one flying lap, in reverse direction of the course. Regulations will be available shortly from F. D. Dent, 8/12, Minerva Road, London, N.W.10.

West Hants and Dorset C.C. and Yeovil C.C.—Wiscombe speed hill climb, 24 August, starting 2.30 p.m. Open to members of promoting clubs. Cars will be divided into eight classes. Entries to R. R. Mountford, 6, Orchard Avenue, Parkstone, Poole, Dorset, by 19 August. Entry fee £1 10s per entry, maximum entry 50.

Bentley D.C.—Firle hill climb, 7 September, starting at 2 p.m. Open to members of following clubs:— Bentley D.C., Aston Martin O.C., Brighton and Hove M.C., Lagonda C.C. and B.A.R.C. Cars will be divided into eleven classes. Entries to Lt. Col. C. H. D. Berthon, Madges, Long Crendon, Aylesbury, Buckinghamshire. Entry fee £1 10s per entry, closing date 23 August.

A while-you-wait lubrication service is now operated by F. A. Peacock, Ltd., Balham High Road, London, S.W.12. The accommodation for vehicles in the Castrol lubrication bays, sufficient for six cars and one large commercial vehicle, is part of a big rebuilding scheme

Trade and  *Industry*

Steiners of Liverpool are being purchased by the J. Davy group of car hire and car sales companies.

The new competitions assistant for the Mobil Oil Company is Mr. C. M. Temple, who has taken up his duties with the competition manager, Mr. John Theodosius.

Mr. G. W. M. Wiggins has been appointed manager of the motor fuel department by Petrofina (Great Britain), Ltd. He is succeeded as manager of the South East region by Mr. N. R. Griffiths.

The district office and warehouse in Aberdeen of the Firestone Tyre and Rubber Co., Ltd. has moved to larger premises specially built at 41, Nelson Street. Mr. J. A. Allen is district manager.

The Chequered Speed Shop, Ltd., P.O. Box A185, 92, Sinoia Street, Avondale, Salisbury, have been appointed distributors in Southern Rhodesia for the performance engine conversions of the Alexander Engineering Co., Ltd., of Haddenham, Buckinghamshire.

Stewart and Ardern, Ltd., have opened a new car and commercial vehicle sales centre and petrol station at Morris House, Kingsland High Street, London, E.8, in premises previously occupied by Dalston Motors. The company are London distributors for Morris cars and commercial vehicles.

Heenan and Froude, Ltd., of Worcester, have built two tyre testing rigs incorporating a number of new features. Each takes two tyres simultaneously, and should one tyre fail then both tyres are withdrawn automatically. One rig is for the North British Rubber Co. in Edinburgh, and the other for Francis Shaw, Ltd., of Manchester, as part of a consignment of tyre-making equipment for Yugoslavia.

Mr. W. Clark, works director of the John Bull Rubber Co., Ltd., has been appointed a director of Metalastik, Ltd., of Leicester.

A new lubrication department was recently opened for Alexanders of Edinburgh, Ltd., by Mr. James S. Kemp, general sales manager of the Ford Motor Co., Ltd., of Dagenham.

Mr. C. H. Burrows has retired as quality inspector at the Chelsea works of Jack Barclay (Service), Ltd., after 46 years' association with Rolls-Royce cars. The first 28 were spent at the Rolls-Royce works in Derby and London.

A new petroil mixture for two-stroke engines has been introduced by Shell-Mex and BP, Ltd., Shell-Mex House, Strand, London, W.C.2. Called BP-Zoom, it incorporates BP Energol two-stroke oil. It is to be dispensed at BP garages from a specially designed petroil pump.

Dr. J. D. Armit has been appointed a director of Triplex Holdings, Ltd., the controlling company of the Triplex Safety Glass Co., Ltd., and the Triplex group's chemical-glassware and engineering subsidiaries. Dr. Armit was formerly a director of I.C.I., and wartime director-general of explosives at the Ministry of Supply.

Information Sought

Correspondence, addressed c/o *The Autocar*, can be forwarded on behalf of readers seeking the following handbooks and information:

No. 17454. Experiences Required.
"J.W.E."—General experiences, performance data, and any other available information on the Simca Aronde, DKW and Wolseley 1500.

No. 17455. Handbooks Required
"R.B.P."—1938 Hillman Minx.
"R.H.R."—1939 Wolseley Fourteen.
"P.J.C."—1946 Series E Morris Eight.
"J.A.B."—1939 Morris Twelve-Four; also a workshop manual.

NEW CAR PRICES

	U.K. List Price · With Tax					
	£	s	d	£	s	d
A.C.						
Ace	1,188	0	0	1,783	7	0
Ace-Bristol	1,443	0	0	2,165	17	0
Aceca	1,446	0	0	2,170	7	0
Aceca-Bristol	1,700	0	0	2,551	7	0
ALFA ROMEO						
Giulietta	1,678	0	0	1,918	7	0
Giulietta TI	1,395	0	0	2,093	17	0
Giulietta Veloce	1,798	0	0	2,698	7	0
1900 Super	1,665	0	0	2,498	17	0
Super Sprint	2,250	0	0	3,376	7	0
ALLARD						
Palm Beach (Ford)	1,050	0	0	1,576	7	0
Palm Beach (Jaguar)	1,300	0	0	1,951	7	0
Gran Turismo	1,700	0	0	2,551	7	0
ALVIS						
Sports saloon 3-litre	1,995	0	0	2,993	17	0
Convertible	2,195	0	0	3,293	17	0
AMBASSADOR						
Super 4-door	1,630	0	0	2,446	7	0
Estate car	1,725	0	0	2,588	17	0
Custom 4-door	1,700	0	0	2,551	7	0
Country estate car	1,795	0	0	2,693	17	0
ARMSTRONG SIDDELEY						
Sapphire 346	1,100	0	0	1,651	7	0
(automatic)	1,195	0	0	1,793	17	0
Limousine	1,910	0	0	2,866	7	0
(automatic)	2,099	0	0	3,149	17	0
ASTON MARTIN						
DB Mk. III	2,050	0	0	3,076	7	0
Drop-head Coupé	2,300	0	0	3,451	7	0
ASTRA						
Utility	308	0	0	471	16	0
AUSTIN						
A.35 2-door	379	0	0	569	17	0
2-door de luxe	387	15	0	582	19	6
A.35 4-door	396	10	0	596	2	0
4-door de luxe	400	0	0	601	7	0
Countryman	444	0	0	667	7	0
A.55 Cambridge	538	0	0	808	7	0
A.55 de luxe	570	0	0	856	7	0
A.95 Westminster	689	0	0	1,034	17	0
A.95 de luxe	719	0	0	1,079	17	0
Countryman	834	0	0	1,252	7	0
A.105	823	0	0	1,235	17	0
(automatic)	885	10	0	1,329	12	0
Vanden Plas	982	10	0	1,475	2	0
(automatic)	1,045	0	0	1,568	17	0
Gipsy	650	0	0	650	0	0
(diesel)	755	0	0	755	0	0
AUSTIN-HEALEY						
Sprite	445	0	0	668	17	0
100-Six	817	0	0	1,226	17	0
BENTLEY						
Series S	3,695	0	0	5,543	17	0
L.W.B.	4,595	0	0	6,890	17	0
Freestone and Webb	5,187	0	0	7,781	17	0
Hooper	4,990	0	0	7,486	7	0
H. J. Mulliner	5,455	0	0	8,183	17	0
James Young	4,915	0	0	7,373	17	0
Continental						
H. J. Mulliner	5,275	0	0	7,913	17	0
Four door	5,355	0	0	8,033	17	0
Park Ward	4,995	0	0	7,493	17	0
BERKELEY						
Two-seater 328 c.c.	332	7	6	490	18	3
492 c.c.	381	15	4	573	19	10
Hardtop	397	14	7	597	18	11
B.M.W.						
501 2.6	1,638	0	0	2,458	7	0
502 2.6	1,792	0	0	2,687	7	0
502 3.2	1,970	0	0	2,956	7	0
502S 3.2	2,165	0	0	3,248	17	0
503	3,500	0	0	5,251	7	0
BORGWARD						
Isabella	830	0	0	1,246	7	0
Combi estate car	880	0	0	1,321	7	0
Touring sport	950	0	0	1,426	7	0
TS coupé	1,330	0	0	1,996	7	0
BRISTOL						
405	2,390	0	0	3,586	7	0
Convertible	2,450	0	0	3,767	7	0
BUICK						
63 Century	2,175	0	0	3,263	17	0
CADILLAC						
6309 Fleetwood	3,425	0	0	5,138	17	0
6239D sedan de ville	3,125	0	0	4,688	17	0
CHEVROLET						
Bel-Air	1,410	0	0	2,116	7	0
Sport	1,440	0	0	2,161	7	0
Convertible	1,555	0	0	2,333	17	0
Nomad estate car	1,500	0	0	2,251	7	0
Corvette	1,906	0	0	2,860	7	0
CHRYSLER						
300C	2,740	0	0	4,111	7	0
Convertible	2,960	0	0	4,441	7	0
Imperial	2,885	0	0	4,328	17	0
Crown	3,045	0	0	4,568	17	0
CITROEN						
2 c.v.	398	0	0	598	7	0
ID19	998	0	0	1,498	7	0
DS19	1,150	0	0	1,726	7	0
DAIMLER						
One-O-Four	1,595	15	4	2,395	0	0
Majestic	1,662	8	8	2,495	0	0
DK400A	2,795	15	4	4,195	0	0
DK400B	2,875	15	4	4,315	0	0
Hooper limousine	4,385	0	0	6,578	17	0

	U.K. List Price · With Tax					
	£	s	d	£	s	d
D.B.						
Rally HBR5	1,299	2	0	1,950	0	0
DELLOW						
Mark VI	575	0	0	862	17	0
Mark VI sports	625	0	0	938	7	0
D.K.W.						
Fixed-head coupé	765	0	0	1,148	17	0
Four-door saloon	798	0	0	1,198	7	0
Universal estate car	830	0	0	1,246	7	0
1000 fixed-head coupé	850	0	0	1,276	7	0
DODGE						
Custom Royal	2,040	0	0	3,061	7	0
EDSEL						
Pacer	1,635	0	0	2,453	17	0
Corsair	1,991	0	0	2,987	17	0
Citation hardtop	2,100	10	0	3,152	2	0
FACEL VEGA	3,150	0	0	4,726	7	0
FVS hardtop						
(automatic)	2,980	0	0	4,471	7	0
FAIRTHORPE						
Atomota	426	0	0	640	7	0
Electron Minor	479	0	0	719	17	0
Electron Mk. II	769	0	0	1,154	17	0
FIAT						
500 de luxe	370	0	0	556	7	0
600	432	0	0	649	7	0
Convertible	452	0	0	679	7	0
Multipla 4/5	532	0	0	799	7	0
Multipla 6	540	0	0	811	7	0
1100	578	10	0	869	2	0
1200 Full Light	798	10	0	1,199	2	0
1400B	774	0	0	1,162	7	0
1900B	980	0	0	1,471	7	0
1900B Full Light	1,385	0	0	2,078	17	0
FORD						
Popular	295	0	0	443	17	0
Anglia	380	0	0	571	7	0
Anglia de luxe	400	0	0	601	7	0
Prefect	415	0	0	623	17	0
Prefect de luxe	438	0	0	658	8	0
Escort	434	0	0	652	7	0
Squire	463	0	0	695	17	0
Consul	545	0	0	818	17	0
Consul de luxe	580	0	0	871	7	0
Convertible	660	0	0	991	7	0
Estate car	760	0	0	1,141	7	0
Zephyr	610	0	0	916	7	0
(automatic)	725	0	0	1,088	17	0
Convertible	778	0	0	1,168	7	0
Estate car	825	0	0	1,238	17	0
Zodiac	675	0	0	1,013	17	0
(automatic)	790	0	0	1,186	7	0
Convertible	873	0	0	1,310	17	0
Estate car	895	0	0	1,343	17	0
FORD (American)						
Thunderbird hardtop	2,133	10	0	3,201	12	0
FORD (Canadian)						
Custom 300	1,307	0	0	1,961	17	0
Fairlane 500 Town	1,377	0	0	2,066	17	0
500 Town Victoria	1,409	0	0	2,144	17	0
Ranch Wagon	1,362	0	0	2,044	7	0
FORD (Germany)						
12M	702	0	0	1,054	7	0
15M	763	0	0	1,145	17	0
FRAZER NASH						
Sebring and G.T.	2,500	0	0	3,761	7	0
GOGGOMOBIL						
T.300	329	0	0	494	17	0
T.400	342	6	0	514	16	0
TS.300	416	0	0	625	7	0
Convertible	458	0	0	688	17	0
TS.400	428	13	4	644	7	0
Convertible	471	0	0	707	17	0
HILLMAN						
Minx Special	498	0	0	748	7	0
Minx de luxe	529	0	0	794	17	0
Convertible	598	0	0	898	7	0
Estate car	625	0	0	938	17	0
Husky	465	0	0	698	17	0
HUMBER						
Hawk	840	0	0	1,261	7	0
(automatic)	955	0	0	1,433	17	0
Estate car	975	0	0	1,463	17	0
Touring limousine	920	0	0	1,381	7	0
ISETTA (Gt. Britain)						
300	232	8	5	349	19	6
600	319	0	0	479	17	0
JAGUAR						
2.4	996	0	0	1,495	7	0
Special equip. model	1,019	0	0	1,529	17	0
3.4	1,114	0	0	1,672	7	0
XK150 hardtop	1,175	0	0	1,763	17	0
(automatic)	1,303	0	0	1,955	17	0
Specia. equip. model	1,292	0	0	1,939	7	0
Convertible	1,195	0	0	1,793	17	0
Roadster	Export only					
Mark VIII	1,219	0	0	1,892	17	0
(automatic)	1,331	0	0	1,997	17	0
JENSEN						
541	1,435	0	0	2,153	17	0
541 de luxe	1,750	0	0	2,626	7	0
541 R	1,910	0	0	2,866	7	0
Interceptor	1,800	0	0	2,701	7	0
LANCIA						
Appia Series II	1,125	0	0	1,668	17	0
Aurelia Gran Turismo	2,230	0	0	3,346	7	0
Flaminia	2,500	0	0	3,715	7	0

(Continued overleaf)

NEW CAR PRICES

U.K. List Price · With Tax

	£	s	d	£	s	d
LINCOLN						
Capri	2,600	0	0	3,901	7	0
Première	2,869	10	0	4,305	12	0
Continental hardtop	3,142	10	0	4,715	2	0
LLOYD						
LP600	390	0	0	586	7	0
LC600 Cabrio	427	0	0	641	17	0
LS600 Combi	405	0	0	608	17	0
LOTUS						
Seven	690	0	0	1,036	7	0
Elite	1,300	0	0	1,951	7	0
Sports	1,021	0	0	1,511	2	0
Club	1,309	0	0	1,937	7	0
Le Mans 75	1,625	0	0	2,405	4	0
MEADOWS						
Frisky	299	0	0	449	17	0
Friskysport	322	0	0	484	7	0
MERCEDES-BENZ						
180	1,195	0	0	1,793	17	0
180D (diesel)	1,295	0	0	1,889	17	0
190	1,250	0	0	1,876	7	0
190SL	1,930	0	0	2,896	7	0
219	1,430	0	0	2,146	7	0
220S	1,595	0	0	2,393	17	0
300 (automatic)	2,600	0	0	5,401	7	0
300SL Roadster	3,750	0	0	5,626	7	0
MERCURY (American)						
Medalist	1,503	0	0	2,255	17	0
Monterey	1,561	10	0	2,343	10	0
Montclair	1,888	0	0	2,833	7	0
Parklane	2,224	10	0	3,368	2	0
Commuter estate car	1,778	0	0	2,668	7	0
MERCURY (Canadian)						
Monterey	1,481	0	0	2,222	17	0
Phaeton	1,640	0	0	2,461	7	0
Montclair	1,716	0	0	2,575	7	0
Phaeton	1,765	0	0	2,648	17	0
METROPOLITAN						
Hardtop	498	10	0	749	2	0
Convertible	516	0	0	775	7	0
M.G.						
MGA	663	0	0	995	17	0
Twin Cam MGA	843	0	0	1,265	17	0
Hardtop	724	0	0	1,087	7	0
Magnette	714	0	0	1,072	7	0
MORGAN						
4/4 Series II	498	0	0	748	7	0
Competition	550	0	0	826	7	0
Plus 4 (TR) 2-seater	645	0	0	968	17	0
Convertible	693	0	0	1,040	17	0
Plus 4 (Vanguard)	594	0	0	892	7	0
Convertible	641	0	0	962	17	0
MORRIS						
Minor 1000 2-door	416	0	0	625	7	0
2-door de luxe	433	10	0	651	12	0
4-door	441	0	0	662	17	0
4-door de luxe	462	0	0	694	7	0
Tourer	416	0	0	625	7	0
Tourer de luxe	433	0	0	651	12	0
Traveller	471	10	0	708	12	0
Traveller de luxe	488	10	0	734	2	0
Cowley	555	10	0	834	12	0
Oxford III	589	0	0	884	17	0
Traveller	665	0	0	999	17	0
OLDSMOBILE						
88	1,820	0	0	2,731	7	0
Super 88	1,965	0	0	2,948	17	0
98	2,260	0	0	3,391	7	0
PACKARD						
4-door Sedan	1,680	0	0	2,521	7	0
Station Wagon	1,745	0	0	2,623	17	0
Hawk hardtop	2,004	0	0	3,007	7	0
PANHARD						
Dyna Grand Standing	702	8	8	1,055	0	0
Convertible	1,032	8	8	1,550	0	0
PEERLESS						
G T. 2-litre	998	0	0	1,498	7	0
PEUGEOT						
203	633	9	1	952	8	2
403	796	2	11	1,195	11	5
Estate car	865	0	0	1,298	17	0
PLYMOUTH						
Savoy Vee-8	1,718	0	0	2,578	7	0
Belvedere convertible	1,790	0	0	2,686	7	0
Savoy Suburban	1,915	0	0	2,773	17	0
Fury	1,890	0	0	2,791	7	0
PONTIAC						
Chieftain Catalina	1,980	0	0	2,971	7	0
Bonneville Custom	2,300	0	0	3,461	7	0
Super Chief Catalina	2,040	0	0	3,061	7	0
Star Chief Catalina	2,150	0	0	3,226	7	0
PORSCHE						
346A/1600 fixed head	1,330	0	0	1,996	7	0
Hardtop (detachable)	1,450	0	0	2,176	7	0
Cabriolet (detachable)	1,490	0	0	2,236	7	0
356A/1500 fixed head	2,100	0	0	3,151	7	0
Carrera hardtop	2,220	0	0	3,331	7	0
Carrera Cabriolet	2,260	0	0	3,391	7	0
PRINCESS						
IV	2,250	0	0	3,376	7	0
IV limousine	2,360	0	0	3,541	7	0
L.W.B. models	2,150	0	0	3,226	7	0
RAMBLER						
De luxe	1,250	0	0	1,876	7	0
Super	1,285	0	0	1,928	17	0
Estate car	1,375	0	0	2,063	17	0
Custom	1,350	0	0	2,026	7	0
Estate car	1,440	0	0	2,161	7	0

U.K. List Price · With Tax

	£	s	d	£	s	d
RENAULT						
750	437	0	0	656	17	0
Dauphine	505	0	0	758	17	0
(Ferlec clutch)	530	10	0	797	2	0
Frégate de luxe	894	10	0	1,343	2	0
Transfluide	987	0	0	1,481	17	0
Domaine estate car	894	10	0	1,343	2	0
RILEY						
One-point-five	575	0	0	863	17	0
Two-point-six	940	0	0	1,411	7	0
(automatic)	1,045	0	0	1,568	17	0
ROLLS-ROYCE						
Silver Cloud	3,795	0	0	5,693	17	0
Limousine	4,595	0	0	6,783	17	0
Freestone and Webb	5,282	0	0	7,924	7	0
Hooper	5,085	0	0	7,628	17	0
H. J. Mulliner	5,550	0	0	8,326	7	0
James Young	5,010	0	0	7,517	7	0
Silver Wraith						
F. and W. limousine	5,638	0	0	8,458	7	0
7-passenger	5,752	0	0	8,629	7	0
Park Ward	5,495	0	0	8,243	17	0
7-passenger	5,805	0	0	8,708	17	0
H. J. Mulliner	5,625	0	0	8,438	17	0
Hooper limousine	5,580	0	0	8,371	7	0
7-passenger	5,805	0	0	8,708	17	0
James Young	5,680	0	0	8,521	7	0
ROVER						
60	883	0	0	1,325	17	0
75	963	0	0	1,445	17	0
90	999	0	0	1,499	17	0
105S	1,088	0	0	1,633	7	0
105R	1,124	0	0	1,687	7	0
105R de luxe	1,155	0	0	1,733	17	0
Land Rover II 88	640	0	0	640	0	0
Diesel	740	0	0	740	0	0
109in Basic	730	0	0	730	0	0
Diesel	820	0	0	820	0	0
107in estate car	815	0	0	1,223	17	0
SIMCA ARONDE						
Aronde 1300	532	0	0	799	7	0
Aronde Chatelaine	650	0	0	976	7	0
Elysée 1300	599	0	0	899	17	0
Montlhéry	625	0	0	938	17	0
Grande Large (Flash)	679	0	0	1,019	17	0
Grande Large (Special)	705	0	0	1,058	17	0
SIMCA VEDETTE						
Beaulieu	965	10	0	1,449	12	0
SINGER						
Gazelle	598	0	0	898	7	0
Convertible	665	0	0	998	17	0
Estate car	695	0	0	1,043	17	0
SKODA						
440	525	0	0	788	17	0
Estate car	695	0	0	1,043	17	0
450 *convertible*	725	0	0	1,088	17	0
STANDARD						
Eight	425	0	0	637	17	0
Super Ten	435	0	0	653	17	0
Pennant	485	0	0	728	17	0
Companion estate car	495	0	0	743	17	0
Ensign	590	0	0	899	17	0
Vanguard III	675	0	0	1,013	17	0
(automatic)	790	0	0	1,186	7	0
Estate car	765	0	0	1,148	7	0
Sportsman	820	0	0	1,231	7	0
STUDEBAKER						
Scotsman	1,130	0	0	1,696	7	0
Estate car	1,240	0	0	1,861	7	0
Commander	1,400	0	0	2,101	7	0
President	1,490	0	0	2,236	7	0
SUNBEAM						
Rapier	695	0	0	1,043	17	0
Convertible	735	0	0	1,103	17	0
TRIUMPH						
TR3	699	0	0	1,049	17	0
Hardtop	734	0	0	1,102	7	0
TURNER						
A.35 Sports	575	0	0	862	17	0
UNICAR						
Model T	265	0	0	399	10	0
VAUXHALL						
Victor	498	0	0	748	7	0
Victor Super	520	0	0	781	7	0
Estate car	620	0	0	931	7	0
Velox III	655	0	0	983	17	0
Cresta II	715	0	0	1,073	17	0
VOLKSWAGEN						
Basic	435	0	0	653	17	0
De Luxe	505	0	0	758	17	0
Convertible	682	10	0	1,025	2	0
Karmann-Ghia coupé	822	10	0	1,235	2	0
Convertible	929	0	0	1,394	17	0
WOLSELEY						
1500	530	0	0	796	7	0
Fifteen-fifty	660	0	0	991	7	0
Six-ninety III	850	0	0	1,276	7	0
(automatic)	955	0	0	1,433	17	0
THREE-WHEELERS						
A.C. Petite II	319	0	0	399	8	6
Bond 2-seater	222	0	0	279	5	9
4-seater	254	0	0	319	8	11
Bruetsch Mopetta	159	12	0	199	3	7
Coronet	360	0	0	449	15	6
Heinkel	312	15	0	394	15	0
Messerschmitt KR200	260	0	0	325	6	4
Reliant Regal	346	0	0	433	3	6
Tourette Senior	259	0	0	325	0	11